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THESIS

REENGINEERING THE UNITED STATES MARINE CORPS' RECRUIT DISTRIBUTION MODEL (RDM)

by

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September 1998

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REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE September 1998	3. REPORT TYPE AND DATES COVERED Master's Thesis

4. TITLE AND SUBTITLE : REENGINEERING THE UNITED STATES MARINE CORPS' RECRUIT DISTRIBUTION MODEL (RDM)

5. FUNDING NUMBERS

6. AUTHOR(S)
Kevin J. Snoap

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Naval Postgraduate School
Monterey, CA 93943-5000

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
The views expressed in this thesis are those of the authors and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT *(maximum 200 words)*

The United States Marine Corps accomplishes its mission "to put the right Marine in the right place at the right time with the right skills and quality of life" in a variety of ways. One of the information systems assisting the Marine Enlisted Assignments branch is the Recruit Distribution Model (RDM). This thesis proposes changes to the RDM user interface, data management, assignment model, and analysis capability. With the use of business process reengineering, process modeling, mathematical modeling, and database design a fully functional prototype has been developed to address each identified change proposal. This reengineered system includes numerous innovations such as an intuitive navigational scheme using switchboards, and the elimination of manual data entry for data already available in the system. It also provides a number of significant contributions beneficial to the USMC. For instance, the reengineered system allows the user to objectively analyze different results by comparing four different objective measures, and its mathematical model uses commercial-off-the-shelf products eliminating a proprietary solver. All these changes will empower managers to effectively and efficiently manage the assignment of recruits in order to meet the challenges of the 21st century.

14. SUBJECT TERMS
USMC, Databases, Manpower Assignment, Models, Decision Support Systems, Graphical User Interface

15. NUMBER OF PAGES 100

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

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REENGINEERING THE UNITED STATES MARINE CORPS' RECRUIT DISTRIBUTION MODEL (RDM)

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY MANAGEMENT

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ABSTRACT

The United States Marine Corps accomplishes its mission "to put the right Marine in the right place at the right time with the right skills and quality of life" in a variety of ways. One of the information systems assisting the Marine Enlisted Assignments branch is the Recruit Distribution Model (RDM). This thesis proposes changes to the RDM user interface, data management, assignment model, and analysis capability. With the use of business process reengineering, process modeling, mathematical modeling, and database design a fully functional prototype has been developed to address each identified change proposal. This reengineered system includes numerous innovations such as an intuitive navigational scheme using switchboards, and the elimination of manual data entry for data already available in the system. It also provides a number of significant contributions beneficial to the USMC. For instance, the reengineered system allows the user to objectively analyze different results by comparing four different objective measures, and its mathematical model uses commercial-off-the-shelf products eliminating a proprietary solver. All these changes will empower managers to effectively and efficiently manage the assignment of recruits in order to meet the challenges of the 21st century.

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I. INTRODUCTION

A. THESIS PURPOSE

The main purpose of this thesis was to reengineer a United States Marine Corps' Manpower Assignment model concerned with the distribution of recruits to schools. This model is called the Recruit Distribution Model (RDM) [Ref. 1]. Throughout this thesis, the RDM is addressed as either RDM or the old system.

Additionally, an important purpose of this thesis was to build a functional prototype of the reengineered RDM. The new system is called the Recruit Distribution Decision Support System (RDdss). It demonstrates the functionality of the reengineered RDM. Throughout this thesis, the RDdss is addressed as either RDdss or the new system.

The majority of this thesis is devoted to a discussion of the RDdss. As necessary, the RDM is discussed. The following section is a general discussion designed to set the stage for understanding the rest of the thesis. It provides a problem description of recruit distribution in the United States Marine Corps (USMC). The last section of this chapter discusses the significant contributions of this thesis.

B. GENERAL PROBLEM DESCRIPTION

Recruit distribution in the USMC is the process that assigns recruits to an entry level school (ELS) leading to a military occupational specialty (See Figure 1). These assignments are made about 48 times a year, during the last week of Marine Corps Recruit Depot (MCRD) training. In this ending period of the MCRD, the recruits are facing the "Crucible," which is the final wicket a recruit endures before officially becoming a Marine. Consequently, the use of the titles recruit and Marine are used interchangably in this paper.

For at least two reasons, this assignment process is a critical manpower function. First, a Marine's military occupational specialty (MOS) ultimately determines

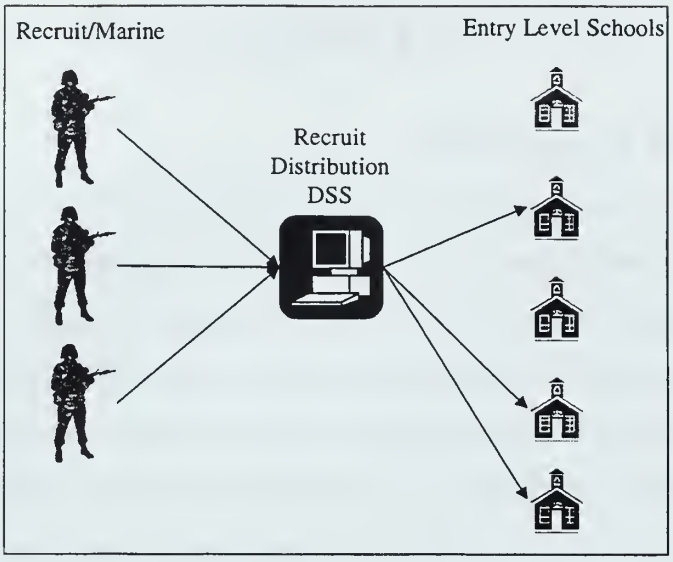


Figure 1. Assigning Marines to Schools

the member's career. Therefore, it is in the best interest of both the Marine and the USMC that a school assignment matching the Marine's desire is made. Second, the success obtained by a service member during his or her time in the USMC is partially based upon successful completion of their ELS, where a pattern of success is established. Therefore, a school assignment maximizing the chances of the Marine completing their training is important. So, fulfilling the Marine's desire and matching him or her to an MOS (i.e. ELS) that fits their personal characteristics is critical to the overall health of the USMC, making the assignment process a critical manpower function [Ref. 2].

Fulfilling the desire of the Marine is accomplished through the use of a contract guarantee. This is called a program enlisted for (PEF), and is specified during the recruiting process. For instance, a PEF = 19 is the "Tank and Assault Amphibian Option." There are currently two ELS's associated with this, "M1A1 Tank Crewman" and "Assault Amphibian Crewman." So, a Marine who chose the PEF = 19 is a possible candidate for these two schools and no others.

Once the Marine's school options are known, a Marine-to-school fit is deter-

mined for each of these schools (See Chapter III, Section B for details). This fitness determination is partly made by looking at each ELS's minimum eligibility requirements, which are call mandatory properties. This term "property" is used as defined by Webster's Ninth New Collegiate Dictionary: "a quality or trait belonging and especially peculiar to an individual or thing." Examples are Age > 18, Clerical >= 80, and Electrical >= 95. The meaning of the first example is obvious. The other two are based on test scores from the Armed Services Vocational Aptitude Battery (ASVAB) test.

In addition to the mandatory properties, most schools also specify desirable properties. A desired property is the same as a mandatory property, except they are not prerequisites for attending the school. For example, the Traffic Management Coordination school desires Marines with a Clerical score of at least 100. So, a desired property of Clerical >= 100 is specified for this ELS.

By using the information obtained from the PEF, mandatory and desired properties, a fitness matrix is generated. This shows the fit of every Marine to every school he or she is eligible for. Since there are about 100 schools and on average 700 Marines considered for every run, this matrix has the potential of 70,000 matches.

However, the matrix size is actually bigger. This is because each of the schools is broken down by classes. Some ELS's have a class starting each week, others every month, and others every quarter. Over a given year, these classes total about 1,800. Following the practice of the USMC, only the classes over the next 3-4 months are considered during the assignment process (see Figure 2). Therefore, the fitness matrix is increased to a potential size of 350,000.

The fact that the school classes start at different times throughout the year and that the assignment process is only conducted 48 times a year (normally this occurs on friday) causes the "3-month look ahead" in the model and has implications important to the USMC. The concern is school seats which never get filled. Each seat is prepaid, guaranteeing its availability to the USMC. This means every vacant

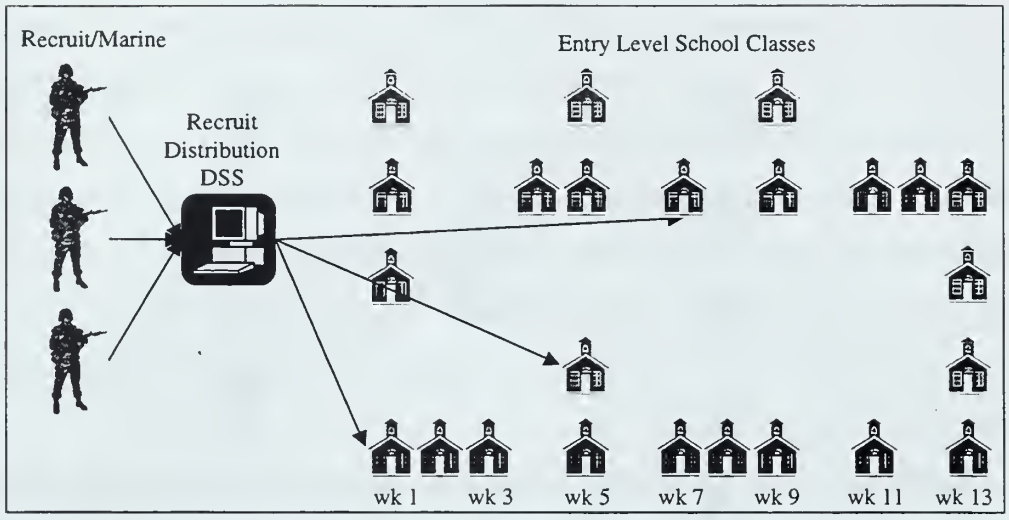


Figure 2. Assigning Marines to School Classes

spot is potentially a lost resource to the USMC. Therefore, in addition to the Marine-to-school fitness concern, there is also the concern of filling all available school seats before their report date is passed.

Another concern is the problem of unassigned Marines. There are numerous reasons why they may not get assigned. Maybe the only school class the Marine was eligible for is already full. Or, possibly he or she is not qualified for any of the school's promised by their PEF. A third possibility is errors in the data provided to the assignment process. Regardless of the cause, it requires identification and corrective action.

Finally, a discussion of the internal and external stakeholders associated with the USMC recruit distribution is given. Internally, there are the USMC and the recruits. Since their concerns were discussed above, they are not given any further consideration. Externally, there is the contractor Decision Support Associates, Inc. (DSAI) who has maintained and upgraded the RDM for over 30 years. They also maintain about eight other major systems for the USMC. For their services, the USMC pays a significant amount of money each year. Additionally, DSAI has proprietary software in some of these systems, which has locked-in the USMC to this

company. Besides the contractor, there is one last significant stakeholder, the American taxpayer. In a time of increasing fiscal constraints and shrinking budgets, it is imperative that wise decisions are made in regards to assigning Marines to ELS's. The American taxpayers expect nothing less.

C. SIGNIFICANT CONTRIBUTIONS

Four significant contributions beneficial to the USMC have been made in this thesis. A detailed discussion of these is given throughout the next three chapters. Here, we list and summarize the contibutions.

- Analysis and articulation of the recruit distribution process - by interviewing USMC and DSAI personnel, reviewing available documentation, and operating the RDM we were able to articulate an understanding of the recruit distribution process using IDEF process modeling. Additional data modeling was articulated in a third normal form relational schema [Ref. 3].
- Development of a mathematical model - by analyzing the assignment process, criteria, and constraints, USMC policies and objectives, a mathematical model for the new system was developed.
- Fully functional prototype - an intuitive and easy to understand new system that seamlessly interfaces with the old system was built. It provides an objective means of comparing assignment results of both systems, and was developed using commercial-off-the-shelf (COTS) software applications.
- Elimination of the proprietary solver and associated contractor lock-in - this was accomplished by replacing the proprietary solver with two COTS applications.

II. REENGINEERING MOTIVATIONS AND PROCESS VIEW

The RDM has a number of limitations which motivated the USMC to reengineer it. We start this chapter by listing and describing each identified limitation. Then, to develop a better understanding of recruit distribution in the USMC, two different process views are examined. The first is concerned with the RDM operating environment, and the second is concerned with the first level of the RDdss IDEF0 model.

A. LIMITATIONS OF OLD SYSTEM

Throughout this reengineering effort, a number of limitations of the old system have become apparent. Many of these limits were recognized earlier, and were part of the USMC's motivation to reengineer the RDM. The following is a list of the identified limitations of the old system.

- Navigation
- Data management
- Assignment procedure
- Transaction processing approach

A description of each limitation is now given.

1. Navigation

Navigating through the RDM is not intuitive. It is neither obvious where one should start or where one should go. Navigation is accomplished by initially selecting an option from one of the main display's drop down menus. This normally results in a window appearing on the computer's desktop. Then, by pointing and clicking on the displayed window's buttons, further navigation is accomplished. After working with the RDM for a number of hours, we were able to navigate through the application

to find and display specific windows. However, after a week or two of not using the system, we had difficulty finding our way around again. In the RDdss, we have created an intuitive navigational scheme using switchboards.

2. Data Management

Data management in the RDM is poor, leading to the introduction of numerous errors. The biggest problem in this regard deals with data entry. The RDM violates the basic rule of never requiring the user to enter data already in the system [Ref. 4]. For example, creating a new school in the RDM requires the user to type data into seven different data fields. Only the course identification number has been automated by a drop down list. In the RDdss, when creating a new school we have reduced the manual data entry to one field.

3. Assignment Procedure

There are at least five limitations associated with the old system's assignment procedure. It

- is encoded into proprietary software,
- examines schools sequentially, rather than globally,
- makes assignments based on school priority rather than weights,
- attempts to maximize fill rather than fit-and-fill, and
- is relatively inflexible.

The solver performing these assignments was designed back in the 1950's, where the major concern was speed and using the minimal amount of memory. It is written in Fortran, and is proprietary code owned by DSAI. It does not search repetitively for an optimal solution by trying to maximize or minimize an objective function. Instead, it maximizes the fill of prioritized school seats. In the RDdss, we use a well know algorithm called CPlex [Ref. 5]. After conducting around 600 iterations of comparing 344 Marines to 576 school classes, it produces an *optimal* solution. Its

objective function was written to make the assignment procedure flexible. It allows the RDdss manager to "game" the system by making fit-and-fill trade-offs, until a "good" solution is found.

4. Transaction Processing Approach

Finally, the old system follows a transaction processing approach, vice a decision support approach [Ref. 6]. This is partially due to the inflexibility of the solver. However, another contributor is the extreme difficulty in comparing one run to another. Other than providing a means for manually computing the numerical difference in Marines assigned, the RDM provides little insight or information views for comparing runs. This is because there is no way to objectively compare one run to another. As it is now, if the RDM manager launches the assignment model and everybody is assigned, the result becomes the approved assignments. In the RDdss, we have created an entire process devoted to providing insightful analysis of a given run (See Chapter IV, Section D for details). Its purpose is to support the making of wise assignment decisions.

B. A PROCESS VIEW

To develop a better understanding of recruit distribution in the USMC, two different process views are now examined. The first is concerned with the current operating environment of the old system. The goal is to develop a big picture view of this process. For those interested in further study of the old system, Appendix A contains the RDM business process IDEF0 model.

The second process view examined concerns the first level of the RDdss business process IDEF0 model. The goal is to develop a better understanding of the new system, without going into great detail. This lays a good foundation for the RDdss discussions in the remainder of this thesis. Appendix B contains the entire IDEF0 model of the new system.

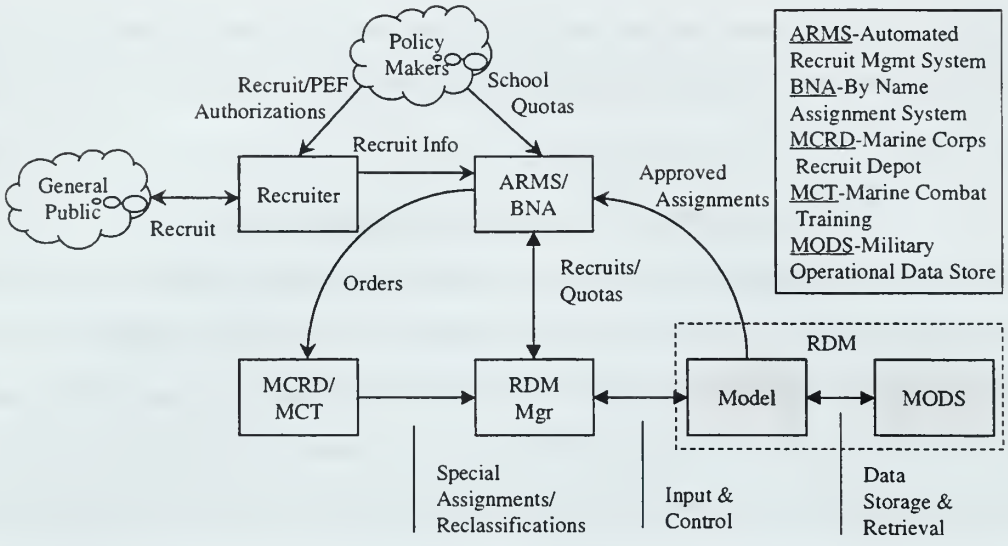


Figure 3. Current Recruit Distribution Operating Environment

1. Recruit Distribution Model Operating Environment

Figure 3 graphically depicts the operating environment of the USMC recruit distribution. At the top are the policy makers, who forecast and decide how many recruits and corresponding school seats are needed over the next few years. In addition to this, they determine how many PEF's or school guarantees to make available for a given year. Currently, about 65-70% of the recruits enter the USMC with a quarantee. The recruit and PEF authorizations for the following year are given to the USMC recruiters, and the school seats or quotas determined for the following years is input into the By Name Assignment (BNA) system.

The recruiters use the recruit and PEF authorizations in recruiting from the general public. Once a potential candidate is found they take the ASVAB, if they have not already done so. Based on the results, the recruiter can offer different quarantees. Once the candidate signs a contract with the USMC, their test scores, PEF, and other personal information such as age and height are entered into the Automated Recruit Management System (ARMS).

Both the ARMS and BNA systems utilize large main frame databases. They

serve as central repositories for maintaining data on many aspects dealing with the USMC. Keeping this information stored in one location ensures everyone is using the same data, providing consistency for all users. One user is the RDM manager, who retrieves recruit and school information from these systems for use in the RDM.

Additionally, the RDM receives data from two other sources. The MCRD instructors provide special assignment inputs. These are personnel identified as having the talents or abilities well suited for a particular school. The other data comes from the MCT. They provide the RDM manager with reclassification information. For instance, a Marine is reclassified if he or she is injured during MCT and is unable to make the start date of their assigned ELS.

All this recruit and school data is input into the RDM, where it is stored in the Military Operational Data Store (MODS). The model is then run. Once a satisfactory set of assignments is obtained, the RDM manager uploads the approved assignments to the ARMS and BNA systems. From this assignment information, the MCRD generates orders for the Marines graduating from the MCRD.

2. New System Level 0 Diagram

Focus is now shifted to the examination of the first process level of the RDdss. Looking any deeper will provide more detail than is necessary at this point. As mentioned earlier, the intent is to lay the foundation for the RDdss discussions in the remainder of this thesis.

Figure 4 shows the level 0, or context diagram of the RDdss. The program used to generate this illustration was BPWin, which is based on IDEF0 modeling. Consequently, all arrows entering from the left are considered"inputs," arrows entering from the top are "controls," arrows exiting to the right are "outputs," and arrows entering from the bottom are "mechanisms." A convenient acronym for this is ICOM [Ref. 7].

- I = Input: something consumed in the process
- C = Control: a constraint on the operation of the process

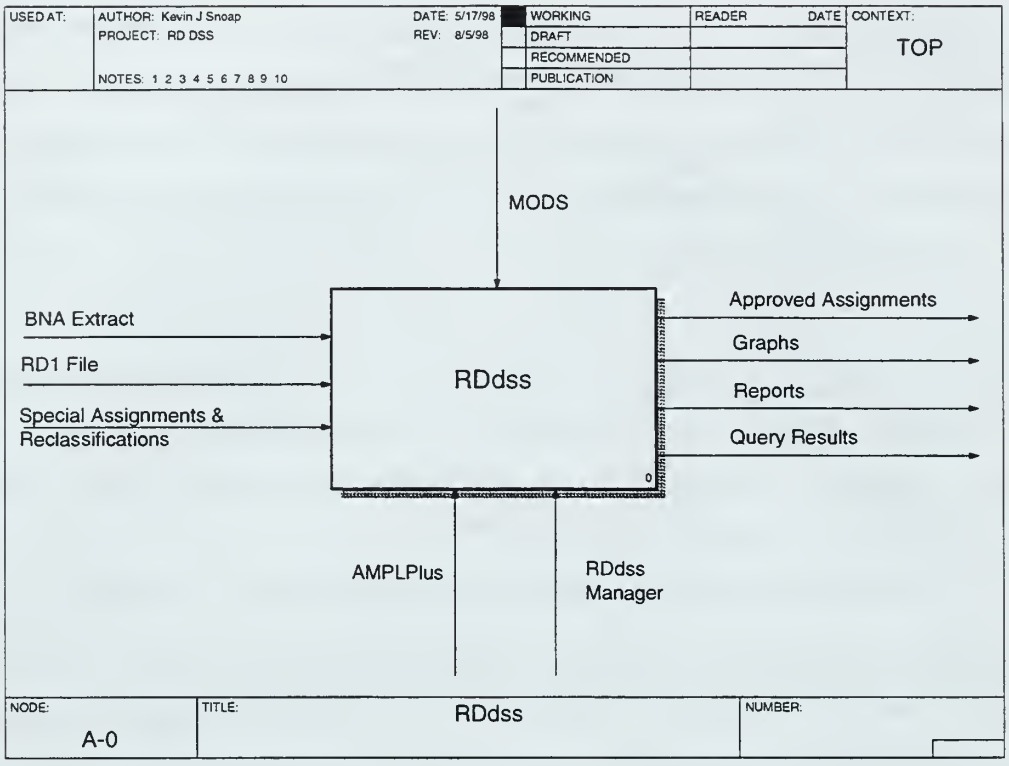


Figure 4. RDdss Process, Level 0 Diagram

- O = Output: something resulting from the process
- M = Mechanism: something used to perform the process, but is not itself consumed

There are three inputs to the RDdss, the BNA extract, the RD1 file, and the special assignments/reclassifications. The first of these contains a set of school class quotas covering a 120 day period. This comes to the RDdss manager as a fixed-width delimited text file. The RD1 file contains the data for the recruits soon to graduate from the MCRD. It also is a fixed-width delimited text file. The special assignments and reclassifications are the recruits identified with special abilities or talents and the Marines requiring reassignment to a different school class, respectively. This last data comes to the RDdss manager as a memo and not a text file.

The only control is the database (or Military Operational Data Store) used to store the data for the RDdss. Among other things, the MODS contains the informa-

tion specifying the eligibility requirements for each of the schools. This is why it is considered a control. It contains the data controlling or constraining the assignment of Marines to schools.

Besides the approved assignments that were mentioned earlier, the output consists of graphs, reports, and query results. Each graph was designed to provide insight into the current assignment result, plus provide a means for comparing different runs. The reports provide a print-out of information the RDdss manager might find useful. For instance, an approved assignment report and an unassigned Marine report are both available. The query results provide different views of the data in the MODS. For instance, one of the queries provides a listing of the fitness scores of all schools a Marine is eligible for.

Finally, the two mechanisms of the RDdss are the RDdss manager and the commercial-off-the-shelf (COTS) application AMPLPlus. Both of these entites are necessary to make the system work, and are not consumed by the process itself. This is why they are considered mechanisms. The RDdss manager is the one who points and clicks on the buttons of the RDdss, making it operate. AMPLPlus is the application containing the mathematical model used in making optimal Marine-to-school assignments. It interfaces with the CPlex algorithm that actually performs the optimization.

III. MODELING THE RECRUIT DISTRIBUTION PROBLEM

We model the recruit distribution problem as an assignment problem. Various submodels are developed to compute input paramters and perform other preprocessing steps for the assignment model, which optimally assigns recruits to a school class. Following is a discussion of important points concerning the recruit distribution problem.

1. Schools and Classes: there are about 130 schools per fiscal year, which are broken down by classes (about 1800 classes per fiscal year). Classes of the same school, commencing on different dates, are identical. However, a class commencing soon after a recruit is available for training has greater utility than another class starting at a later date. On average, there are 600 classes in a run.

2. Program Enlisted For (PEF)

   (a) 65-70% of enlistees enter the USMC under a guarantee (or PEF). The remaining recruits enter under an open contract (PEF=00).

   (b) A recruit can be assigned only to schools associated with his or her PEF. Some PEF's are associated with one school, while others are associated with many schools.

A. OPTIMIZATION OBJECTIVES: FIT AND FILL

Our approach in the assignment model is to optimize by looking at both fit and fill. The importance of both these objectives was discussed in Chapter II, Section B. The idea is to allow the RDdss manager to make a tradeoff between fit and fill.

The high-level objective function is:

- Maximize

$$K_1 \cdot Fitness - K_2 \cdot Penalty$$

Where K_1 is the fitness coefficient and K_2 is the fill coefficient.

By assigning different values to these coefficients, the RDdss manager is able to make trade-offs between fit and fill. This capability makes the assignment model flexible. It provides the RDdss manager a means for "gaming" the system.

B. MEASURING FITNESS

The first half of the high-level objective function deals with maximizing the fitness of Marines to schools. Therefore, we cover this topic now. Following is a discussion of important points concerning the measuring of fitness.

1. Marines are only eligible for assignment to schools corresponding to their PEF guarantees.

2. Associated with each school are specific mandatory properties, or minimum eligibility requirments (e.g. AGE $>$ 18).

3. Eligibilty of a Marine to a school is pre-determined by comparing a Marine's attributes (e.g. Age = 20) to the school's mandatory properties. A Marine is eligible only if he or she meets all the minimum school requirements.

4. Many schools also have desirable properties associated with them. This is a property which is desired in a Marine (e.g. Height $>$ 65 inches), but are not prerequisties for attending the school. Since some desirable properties are more desirable than others, a means of distinquishing the properties is necessary. We have followed the Marine Corps practice of using 6 levels of desirability. Level 1 properties are the most desired, followed by level 2, etc.

5. Let $\mathcal{P}(s)$ denote the set of desirable properties for school s, and let $level(p)$ denote the desirability level of property p. Let $possesses_{(m,p)} = 1$ if Marine m possesses property p (0 otherwise). Further, let $Score_{level(p)}$ (> 0) be the score assigned for possessing a $level(p)$ property, where $Score_{level(p)}$ is calculated using an exponential function inversely proportional to $level(p)$. The scores for levels 1 through 6 are shown in Figure 5.

6. The total fitness score $(fit_{m,s})$ of Marine m to school s is composed of two parts: the score $(ManScore_{m,s})$ for possessing mandatory properties, and the score $(DesScore_{m,s})$ for possessing some or all of the desirable properties.

   Our procedure for computing fitness scores is designed in a manner that, for each school, the average fitness score—with the average computed over all qualified Marines, i.e. Marines who have met the mandatory properties—is constant (i.e. 100). The reason we did this was to ensure each school

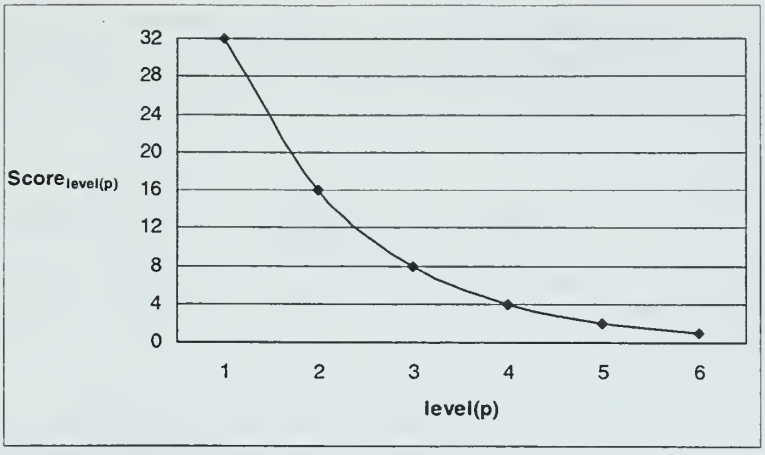


Figure 5. Exponential Function for Calculating $Score_{level(p)}$

received equal treatment in the model, regardless of the number of desirable properties specified for each school. Otherwise, all other things being equal, the school with the greatest number of desirable properties would receive the most assignments.

7. For each school s, percentage weights $ManWt_s$ and $DesWt_s$ are assigned, respectively, for the mandatory and desirable properties. For example, for school s_1, a weight of 70% may be assigned to the mandatory properties and 30% for the desirable properties.

8. A Marine possessing all mandatory properties for school s is given an initial score $ManScore_{m,s} = ManWt_s \cdot 100$. Marines who do not possess all mandatory properties for a school are given an overall fitness score of 0 for that school.

9. Of all the Marines possessing the mandatory properties, those possessing desirable properties are awarded additional points, which are weighted by the level of the property. The Marine's score for desirable properties is computed as follows:

   - The absolute score $Abs_{m,s}$, for Marine m and school s, based on desirable properties is

   $$Abs_{m,s} = \sum_{p \in \mathcal{P}(s)} Score_{level(p)} \cdot possesses(m,p)$$

   The average of these absolute scores is computed over all qualified Marines. Let $AveAbs_s$ denote the average absolute score for school s.

- Each Marine's fitness score for desirable properties is then computed as a fraction of this average, and normalized by multiplying with the percentage weight for desirable properties. That is, $DesScore_{m,s}$ is a weighted relative score:

$$DesScore_{m,s} = (\frac{Abs_{m,s}}{AveAbs_s}) \cdot DesWt_s \cdot 100$$

The overall average of all these scores is, due to the above construction, $DesWt_s \cdot 100$.

10. The final fitness score, $fit_{m,s}$ is simply the sum $ManScore_{m,s} + DesScore_{m,s}$. It may be seen that, for each school, this number averages (over all the qualified Marines for that school) to 100.

11. As mentioned earlier, schools are broken down by classes that are identical, except for their start dates. Therefore, let $fit_{m,s} = fit_{m,c}$ for each class c of school s.

C. MEASURING FILL

The second half of the objective function deals with maximizing the fill of school seats. We now turn our attention to this topic.

As we discussed in Chapter II, school seats are paid for in advance. This is to guarantee the seat is available to the USMC. Consequently, every vacant spot is potentially a lost resource. Since the model is run about once every week, the biggest concern is the unfilled seats having report dates within the next seven days. Conversely, a seat having a report date in three months is not so critical.

To capture the essence of filling school seats with early report dates, we use a penalty function. The idea is simple. School seats having an early report date get a high penalty, and those having a late report date get a low penalty. A number of functions would have worked for this. We have graphed two candidates in Figure 6. The first is a linear function and the second a large-step function. Each of these was tried in the prototype. In our opinion the latter one is the best choice. It gives a lot of emphasis to the first week, plus it treats all schools having report dates within the same week equally. It is the function currently implemented in the rddss.

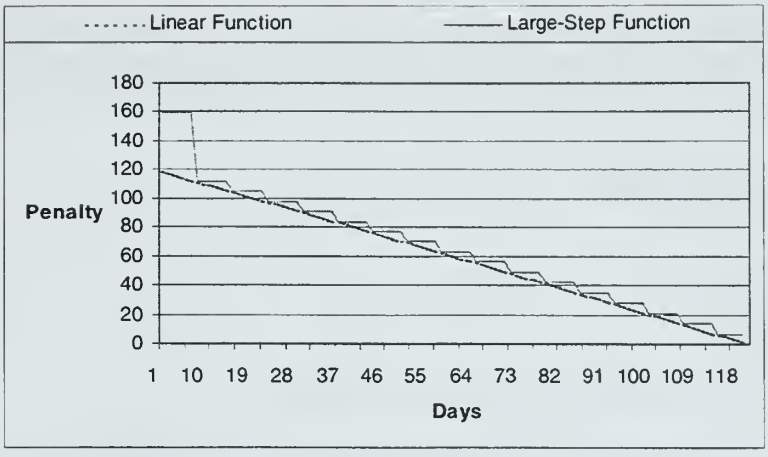


Figure 6. Two Candidate Penalty Functions

D. ASSIGNMENT MODEL

We are now ready to formally describe the assignment model. We will first specify the model's assumptions. Then, we will list the model's notation, followed by its objective function and constraints.

1. Assumptions

1. Each school is unique and identifies a single course of instruction leading to an MOS.

2. In any given run, a school may offer several classes that start on different dates. It is more desirable to fill seats in classes starting earlier. Such classes have a higher penalty per unit shortfall than similar classes starting at a later date.

3. All Marines available for assignment are graduating from the MCRD on the same date.

4. A Marine's eligibility for a school, as well as the fit for each school, is determined by the model preprocessor, taking into account the PEF guarantees, and the mandatory and desirable properties.

5. A Marine is assigned to a school corresponding to their PEF code, or not at all.

6. It is better to leave a Marine unassigned than to overfill a school.

7. The demand for the number of Marines to be trained in each school class is determined by looking at the BNA extract. This demand statement is already constrained by the capacity constraint at each school.

2. Notation

- Sets

  $\mathcal{M}$: Marines

  $\mathcal{C}$: Classes

- Exogenous Variables (Parameters in AMPL)

  $fit_{m,c}$: the desirability of assigning Marine m to class c (note: the fitness score is zero for Marine-class pairs where either the Marine does not meet the classes mandatory properties, or where the class does not fulfill the Marine's PEF guarantee.)

  $demand_c$: demand for Marines to be trained at class c

  $penalty_c$: penalty for each unit of demand not met (higher value means it is more critical to fill the class)

- Decision Variables

  $x_{m,c}$ (binary integer): 1, if Marine is assigned to the given class; 0 otherwise

3. Objective

Maximize the Total Utility: (Total Reward - Total Penalty)

$$TU = k_1 \left(\sum_{c \in \mathcal{C}} \sum_{m \in \mathcal{M}} fit_{m,c} \cdot x_{m,c} \right) - k_2 \left(\sum_{c \in \mathcal{C}} penalty_c \cdot (demand_c - \sum_{m \in \mathcal{M}} x_{m,c}) \right) \quad \text{(III.1)}$$

4. Constraints

- assignmentLimit: a Marine is assignable to at most one school

$$\sum_{c \in \mathcal{C}} x_{m,c} \leq 1 \qquad \forall m \qquad \text{(III.2)}$$

- eligibility: a Marine is only assignable to a class they are fit for (this prevents assigning Marines with a fitness score of zero)

$$x_{m,c} \leq fit_{m,c} \qquad \forall m \; \forall c \qquad \text{(III.3)}$$

- capacity: since penalties apply only if there is a positive shortfall, the objective function would be non-linear. To avoid that, we assume we will never oversupply Marines to schools, resulting in:

$$\sum_{m \in \mathcal{M}} x_{m,c} \leq demand_c \qquad \forall c \tag{III.4}$$

IV. A DECISION SUPPORT SYSTEM FOR RECRUIT DISTRIBUTION

A. ARCHITECTURE AND IMPLEMENTATION

Following is a discussion of the RDdss architecture and its implementation. First, the architectural components are discussed. Then, the steps taken to build the RDdss are described.

1. Architecture

The architecture of the RDdss is depicted in Figure 7. This illustration shows how the six major components of the system are related. We will describe this architecture by examining each component in the following order: switchboard, relational database, preprocessor, assignment model, solver, and analyzer.

The switchboard is one of two components providing an interface between the user and the RDdss. It is the mechanism by which the user controls the operation of the system. Figure 8 illustrates the main switchboard of the RDdss. It is displayed

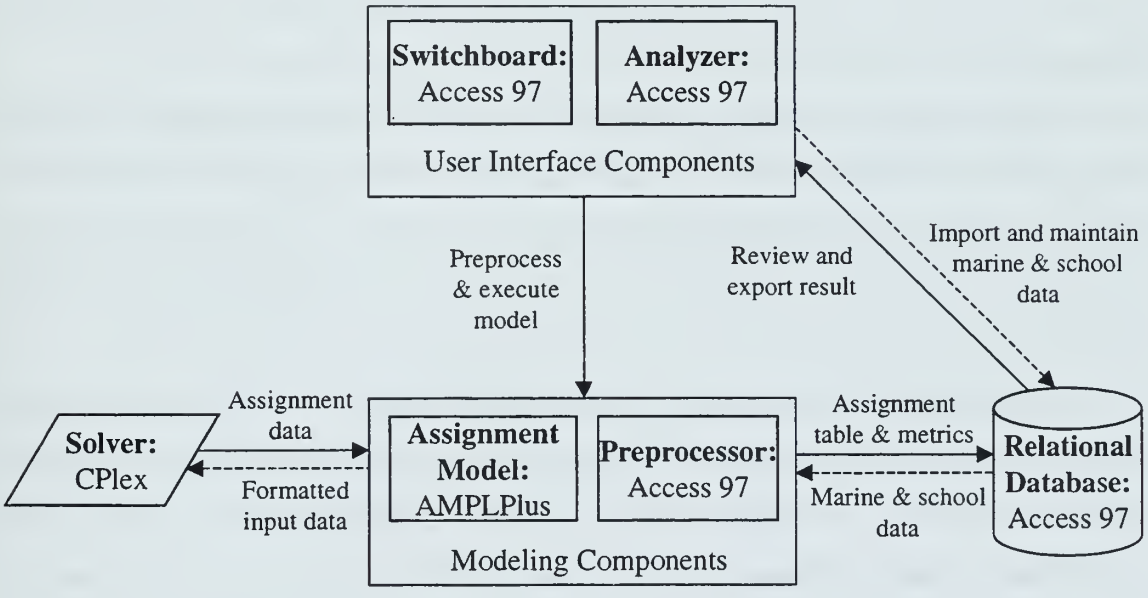


Figure 7. RDdss Architecture

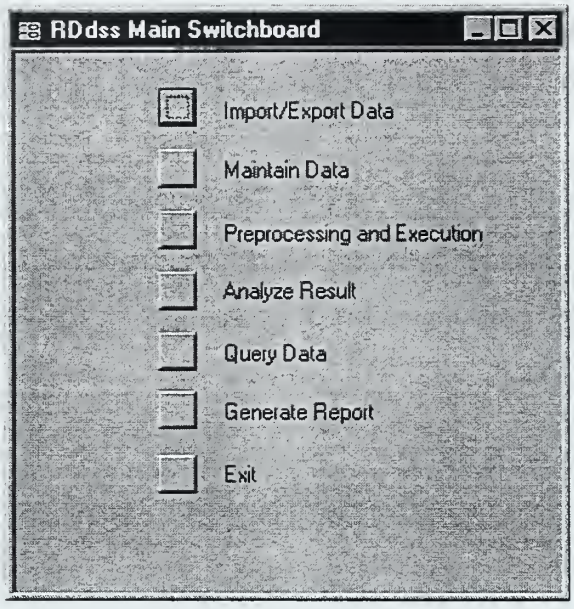


Figure 8. RDdss Main Switchboard

when the application is started. As this illustration depicts, the user can perform the following functions by simply pointing and clicking on the appropriate button: import and export data, maintain data, preprocessing and execution of the assignment model, analyze results, query data, and generate reports. All the RDdss switchboards were generated using Access 97.

The relational database technology was used in the RDdss [Ref. 8]. The actual table relationships are shown in Figure 9. These tables were developed in Access 97, which uses the relational technology. In addition to a few flat files used to communicate with the assignment model, all the data for the RDdss is stored in this database.

The preprocessor is one of the two modeling components. It consists of Access 97 Visual Basic for Applications (VBA) code that computes information necessary for the assignment model [Ref. 9]. It determines the demand of each class, the appropriate penalty associated with each class, and the Marine-to-class fitness matrix. The code for these assignment model inputs is found in Appendix D, lines 452-516 and 4305-4812.

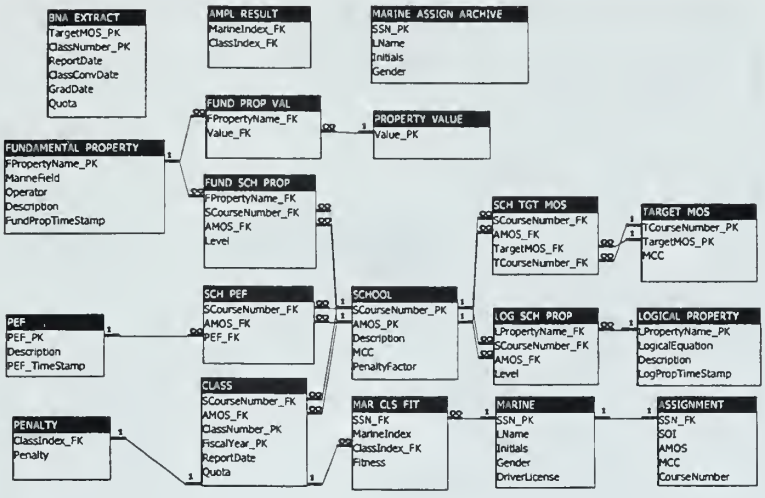


Figure 9. RDdss Relational Schema

The assignment model is the other component of the modeling components. It has been modeled in AMPL [Ref. 10], a language and a computing environment for expressing, solving, and analyzing mathematical programming problems (minimizing or maximizing a function of decision variables, subject to constraints on the variables). A complete discussion of the assignment model's math model is available in Chapter III, Section D.

The next component is the solver. It communicates directly with AMPL, the modeling language of AMPLPlus. As mentioned in Chapter II, it uses an algorithm called CPlex, which is an optimization package for linear, network and integer programming. Working in conjunction with AMPLPlus, the solver finds an optimal solution.

The final component is the analyzer. It is the other component making up the user interface. This is where the RDdss manager analyzes assignment results, seeking insights for developing a "good" solution. Insight is developed mostly by the graphs and numerical information available in the analyzer. These were generated in Access 97 using its report generator and VBA code. The programming used in the analyzer is shown in Appendix D and includes lines 1-310, 2156-2214, and 3756-3827.

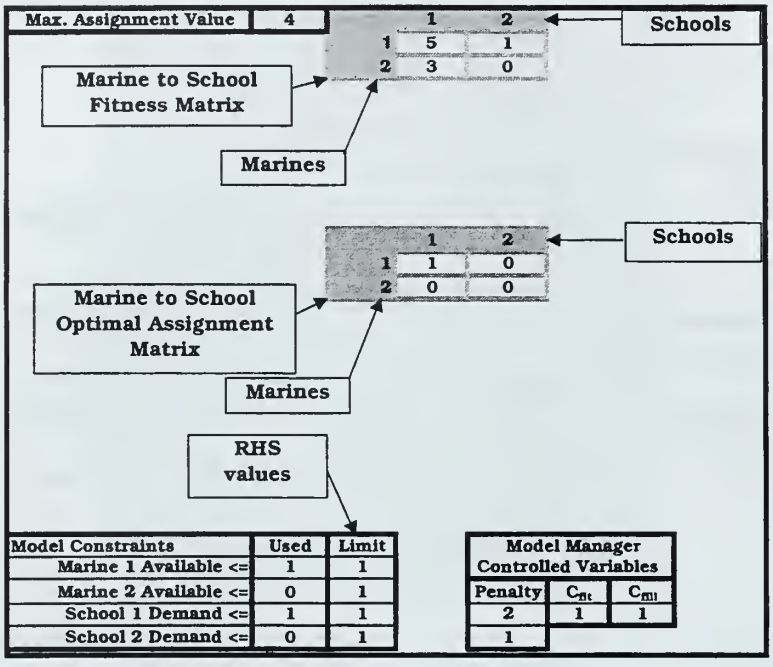


Figure 10. RDdss Demonstration Solver

2. Implementation

Building the RDdss was an iterative process. Some steps took numerous iterations, and some were straightforward. Below is a listing of the 14 major steps it took to build the RDdss.

1. Analyzing the current system was the first step. This included 1) interviewing USMC and DSAI personnel, 2) reviewing available documentation, and 3) operating the RDM.

2. After gathering the current system data, it was necessary to develop a logical understanding of the system. This was accomplished by modeling it with BPWin. Appendix B is the result of this step.

3. With this system understanding, it was possible to envision how the new system would make assignments. Using standard optimization techniques [Ref. 11], a small-scale demonstration solver was built using Excel 97. It is shown in Figure 10.

4. Combining the system understanding and the data requirements for the demonstration solver, it was possible to envision a data structure for the reengineered system. This lead to the development of a third normal form relational schema for the RDdss [Ref. 3].

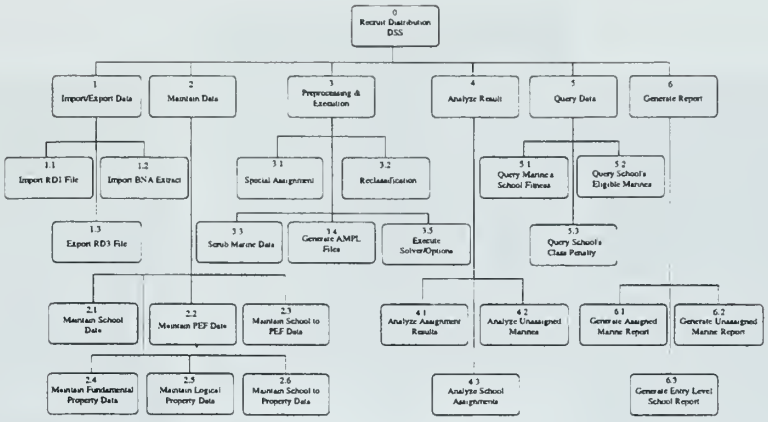


Figure 11. RDdss Decomposition Diagram

5. Using the relational schema as a model, the RDdss tables were built in Access 97. The results of this were seen earlier in Figure 9.

6. As the vision for the reengineered system came more into focus, an intuitive navigational scheme was conceived. This lead to the development of a decomposition diagram for the RDdss. It is demonstrated in Figure 11.

7. Using the decomposition diagram as a model, the user interface was built for the RDdss in Access 97. The Main Switchboard was seen earlier in Figure 8.

8. With the switchboards now in place, VBA coding was commenced [Ref. 9]. This made each switchboard functional and useful.

9. Building upon the concept of the demonstration solver from step 3, a formal mathematical assignment model for the RDdss was developed. This was introduced in Chapter III, Section D.

10. The COTS applications, AMPLPlus and CPlex were installed on the personal computer containing the RDdss.

11. With AMPLPlus now installed, it was possible to code the assignment model into the application. This made it possible to verify our design.

12. Manually creating input files for AMPLPlus is time consuming. So, the preprocessor was coded. This automated the generation of the class demand, class penalty, and Marine-to-class fitness matrix.

13. Further automation of the RDdss was accomplished by interfacing Access 97 and AMPLPlus. This required both VBA and AMPL coding. The end result was a seamless operation of the two applications.

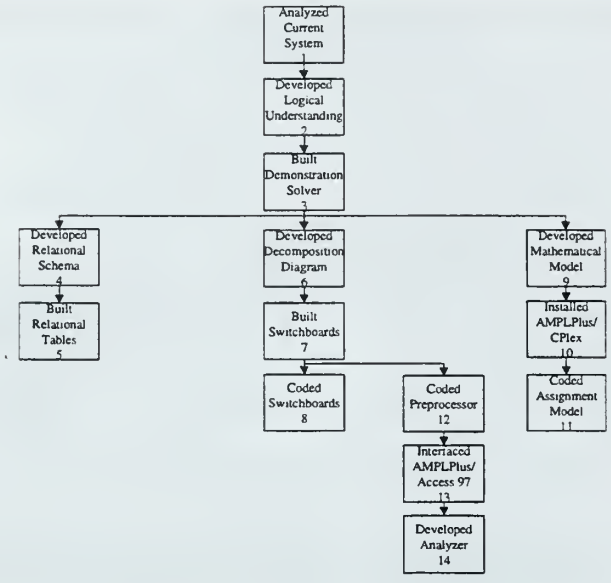


Figure 12. Actual RDdss Build Sequence

14. Finally, much thought was given to ways of gaining insight into the assignment results. This lead to the development of the analyzer, which was discussed briefly in the previous section.

Some of these steps were performed in parallel. The actual order followed in building the RDdss are depicted in Figure 12.

B. USING THE RECRUIT DISTRIBUTION DECISION SUPPORT SYSTEM

In this section, we will discuss using the RDdss. Three aspects are covered, 1) setting up a run, 2) model execution, and 3) customizing a run and results. Each is discussed in the order given here.

1. Setting up a Run

Setting up a run of the RDdss is straightforward and easy to do. Figure 13 graphically illustrates the steps involved. Starting with step 1 on the graph and working through to step 3d(iii), we will discuss a run set-up.

The RDdss manager starts at the top of the Main Switchboard. Here, he or

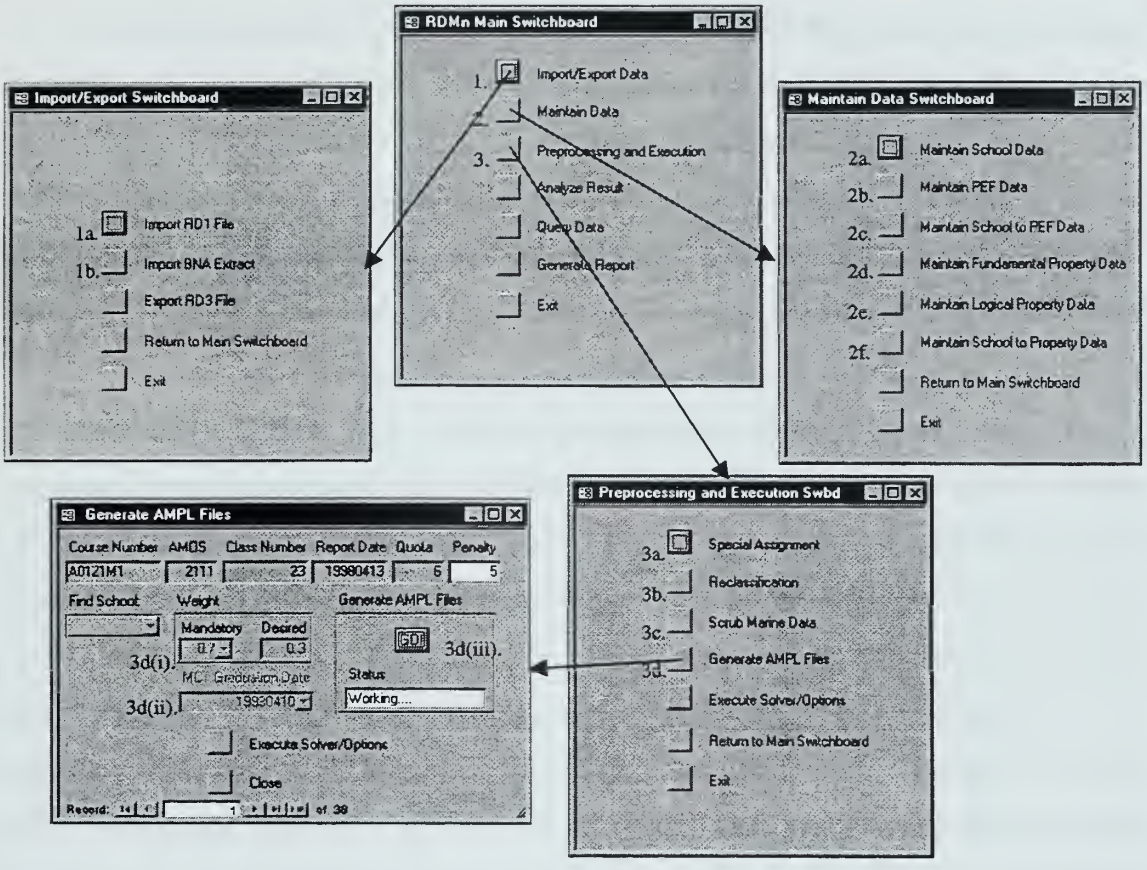


Figure 13. Setting up a Model Run

she clicks on the Import/Export Data button. This will cause the Main Switchboard to close and the Import/Export Switchboard to open. From this switchboard, the RDdss manager will import the RD1 file and the BNA extract into the RDdss MODS. This is easily accomplished by clicking on the corresponding buttons for importing these files. Finally, the RDdss manager will click on the "Return to Main Switchboard" button, causing the Import/Export Switchboard to close and the Main Switchboard to reopen.

The next step is data maintenance. This includes updating, editing, and/or deleting of school related information. The RDdss manager gets to the Maintain Data Switchboard by clicking on the appropriate button on the Main Switchboard.

From the Maintain Data Switchboard, the RDdss manager will start at the

top and work his or her way down to the bottom. The various buttons on this switchboard open forms where data maintenance is performed. For instance, the first button opens the Maintain School Data form, allowing the RDdss manager to create, edit, and/or delete a school. The other buttons allow similar operations with the PEFs, and fundamental and logical properties. After the RDdss manager has finished maintaining the data, he or she returns to the Main Switchboard by clicking on the "Return to Main Switchboard" button.

After data maintenance, the RDdss manager is ready to perform data preprocessing in prepartion for a model run. By clicking on the Preprocessing and Execution button, the Main Switchboard closes and the Preprocessing and Execution Switchboard opens. From here, as on all other switchboards, the RDdss manager starts at the top and works down.

The first three preprocessing buttons directly effect the generation of the class demand, class penalty, and Marine-to-class fitness matrix. This is why they come before the fourth button, Generate AMPL Files. Preprocessing in the correct order will reduce the amount of time spent setting up the run, by minimizing the need to generate a new class demand, class penalty, and Marine-to-class fitness matrix.

The first preprocessing button concerns special assignments. Specially assigning a recruit affects the AMPL input in two ways. First, the respective member is not included in the Marine-to-class fitness matrix, since they already have an assignment. Second, the class demand for the class the recruit is assigned to must decrease by one. Otherwise, it may become overfilled.

The second preprocessing button concerns reclassification of a Marine. Reclassified Marines affect the AMPL input in two ways. First, the class demand of the class they are no longer assigned to must increase by one. This provides an opportunity to fill the empty seat during a subsequent run. Second, the class demand of the class the Marine has been reassigned to must decrease by one. Otherwise, it may become overfilled.

The third preprocessing button concerns data scrubbing, which also affects the AMPL input. It is an attempt to identify and correct errors relating to the Marines. An example is a Marine who has been given an unknown PEF. Since it is not identified by the RDdss, the member will receive a zero fitness score for every class. This will prevent the Marine from getting an assignment.

Following the completion of special assignments, reclassifications and data scrubbing, the RDdss manager is ready to generate the AMPL input files. After going to the Generate AMPL Files form, the first concern is specifying the weights for the mandatory and desired properties. This is specified by the RDdss manager at step 3d(i). What this does is indicate how important the mandatory properties are with respect to the desired properties. For instance, if the RDdss manager decided to give a weight of 1.0 to the Mandatory selection, the Desired selection would automatically fill in with 0.0. This would indicate the desired properties are of no consequence. The default for these two selections is 0.7 for Mandatory, and 0.3 for Desired.

Next, at step 3d(ii), the RDdss manager selects the MCT graduation date desired. This is selected from the drop down list. Then, the RDdss manager pushes the "GO!" button. The system will now generate the AMPL input files, completing the run set-up.

2. Model Execution

Execution of the assignment model takes place after the run set-up has been completed. Figure 14 graphically illustrates the steps taken to execute the model. A discussion of this is now given.

From the Main Switchboard, the RDdss manager points and clicks on the Preprocessing and Execution button. This takes him or her to the corresponding switchboard. From here, the Execute Solver/Options selection is made. This opens up the form where the model is executed from.

The Execute Solver/Options form provides the RDdss manager the ability to set the fit and fill coefficients for the objective function. The default values are 1 for

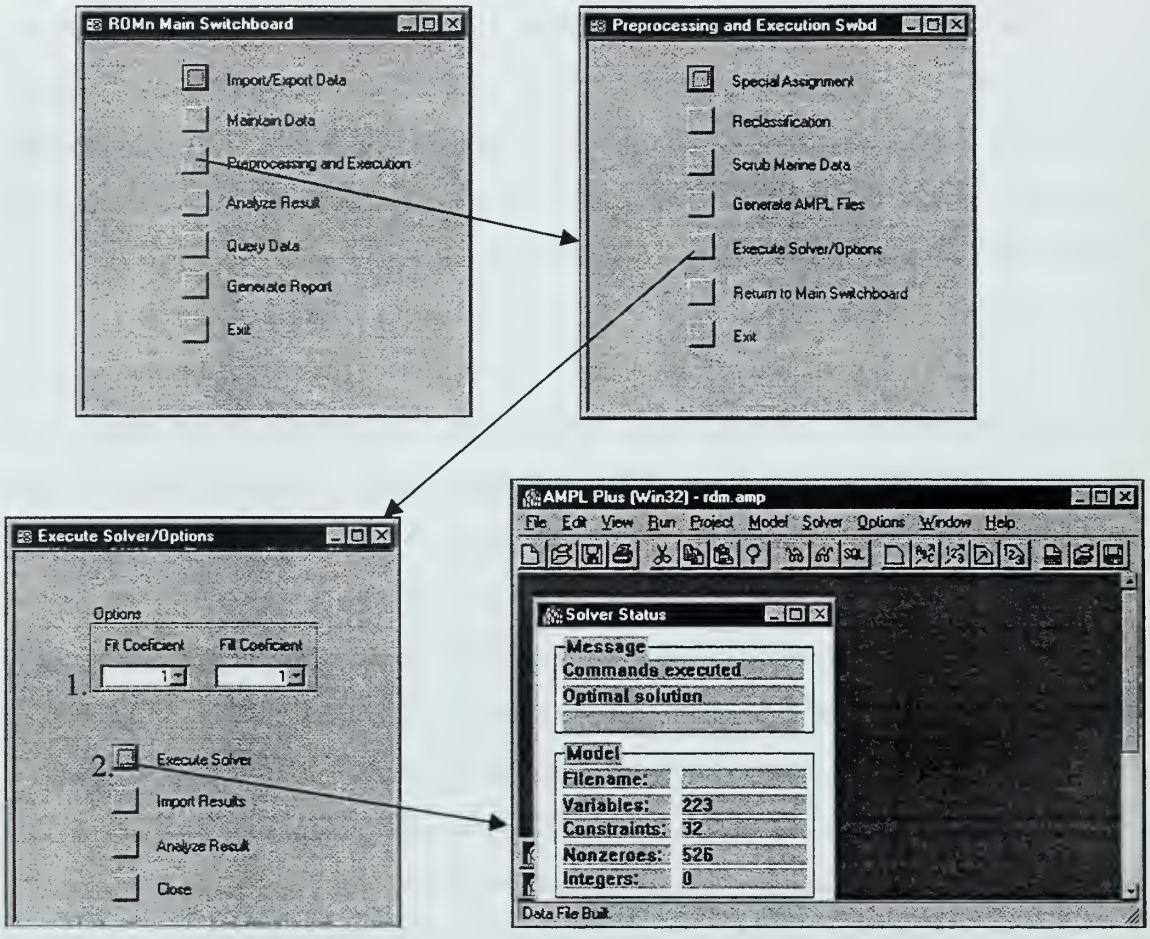


Figure 14. Model Execution

each coefficient. The RDdss manager can change either of these with a whole number from 0 - 100. The significance of these numbers is discussed in detail later in this chapter. Once the desired coefficients have been chosen, the Execute Solver button is pushed.

By selecting the Execute Solver button, AMPLPlus is launched. This application will run without user interaction. First, it will import the RDdss mathematical assignment model. Next, the specified fit and fill coefficients are retrieved. Finally, the preprocessed data generated during the run set-up are imported. Using this input data, AMPLPlus works in conjunction with the solver and generates an optimal assignment solution.

With the generation of an optimal assignment solution, the results are sent to an output file called "rdm.out." AMPLPlus, having completed its task, now closes. This indicates an optimal solution was found and is available for importing. So, the RDdss manager now imports the results by pushing the Import Results button on the Execute Solver/Option form.

3. Customizing a Run and Results

As mentioned in the previous subsection, the RDdss manager can set the fit and fill coefficients of the objective function. This is a key capability of the new system. It is the means by which the RDdss manager can customize a run and "game" the RDdss. This "gaming" of the new system is essential for determining a "good" assignment result.

For instance, if the fit coefficient is set to 0, and the fill coefficient is set to a number > 0, say 1, the assignment model will maximize the fill of schools having early report dates. This has both advantages and disadvantages. One advantage is the average wait time for Marines to attend a school is minimized. Another is that the number of unfilled school seats, having a report date between the current and next scheduled model run, is minimized. However, a disadvantage is the average Marine-to-school fitness score is guaranteed to be the lowest score of all runs.

Conversely, if the fit coefficient is set to a number > 0, say 1, and the fill coefficient is set to 0, the assignment model will maximize the average Marine-to-school fitness. An advantage here is the increased chance of each Marine successfully completing their ELS, establishing a pattern of success early in theri career. However, one disadvantage is the wait time for a Marine to attend a school is guaranteed to be the longest. Also, the number of unfilled school seats, having a report date between the current and next scheduled model run, is guaranteed to be the greatest.

Neither of the above solutions is ideal. A better solution is some where between these two extremes. By changing the fit and fill coefficients of the objective function, the RDdss manager has a means for customizing each run to ensure a "good"

assignment result is found.

C. INNOVATIONS IN USER INTERACTION

A number of user interaction innovations have been made in the RDdss. Two of them have already been discussed. These were the intuitive navigational scheme using the switchboards, and the elimination of manually entering data already available in the system. One more note worthy innovation is now introduced. It is a date change innovation.

The date change innovation concerns changing the graduation date of the Marines in the downloaded RD1 file. This is necessary for generating correct assignment results. The date in the downloaded RD1 file is based on graduation from the MCRD. However, the model needs to know when the Marines are available for assignment. Availability is based on the MCT graduation date.

The old system solution to this problem took three steps. First, the RDM manager used a calendar to determine the MCT graduation date. This is normally 27 days following completion of MCRD, and is always on a friday. So, the RDM manager will find the MCRD graduation date on the calendar and count 27 days. The friday nearest to this day is the day desired. Second, this MCT graduation date, along with the RD1 file, is sent to another branch in the USMC where the date change is made. Third, the file is returned to the RDM manager, who imports the file into the RDM.

The reengineered system has streamlined this process. Within the RDdss, the RDdss manager makes the date change. It is accomplished with the push of a couple buttons.

Figure 15 shows how these changes are made. First, the RDdss manager selects the MCRD graduation date requiring a change. Once this is selected, a calendar appears. Its purpose is to help the RDdss manager correctly identify the MCT graduation date. Next, the "=" button is pushed. Its purpose is to add the number of

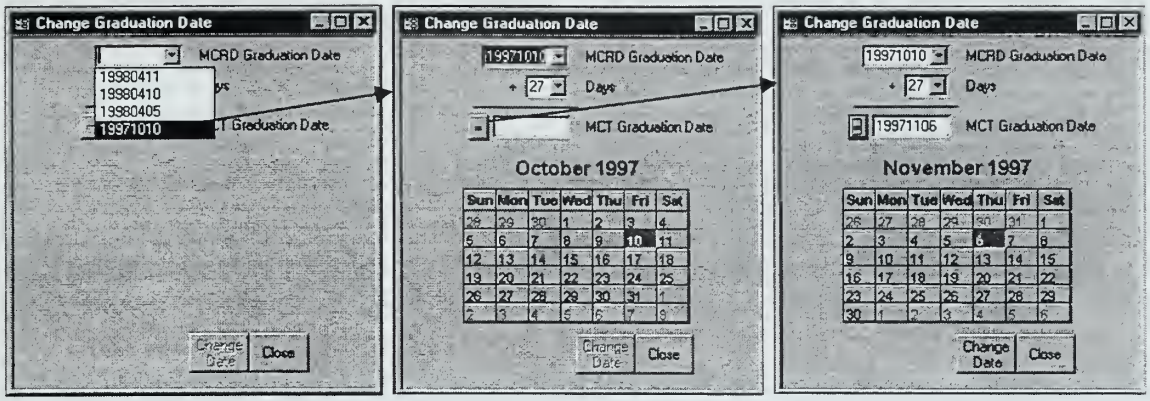


Figure 15. Changing a Graduation Date

days specified in the "Days" field (default is 27), to the MCRD graduation date. This updates the calender as shown on the far right. When the correct date is found, the "Change Date" button is pushed. This makes the desired change to the data in the RDdss database.

D. INNOVATIONS IN ANALYZING MODEL RESULTS

As discussed earlier, the RDdss manager has the capability of "gaming" the system by using different fit and fill coefficients. However, having this ability is not enough. The RDdss manager still needs a means to compare one run against another.

It is hard, if not impossible, to estimate the quality of a solution simply by looking at a list of assignments. The actual assignment results depend on the values of the fit and fill coefficients, which cannot be set at the ideal levels without understanding the impact on solution quality. So, analyzing run results to get insight and develop a "good" solution is now discussed.

Four measures are considered particularly useful in evaluating alternative solutions.

1. Fitness premium. The Marine-to-school fitness function is defined in a way that for each school, the average fitness over all Marines *eligible* for that school is 100. So, for any school, if the average fitness computed over Marines *assigned*

to that school is greater than (or less than) 100, the difference represents a positive (or negative) premium.

2. Unfilled seats in first week. Since the model is run nearly every week, seats left unfilled in classes starting in the first week will remain unfilled. This represents wasted resources.

3. Average wait time for Marines. Experience has shown that the longer a Marine waits before attending their ELS, the greater the chance of disciplinary problems. Therefore, it is generally better to keep this wait period short.

4. Unassigned Marines. A purpose of the system is to assign each Marine to a school. Therefore, knowing the number of unassigned Marines is an important measure.

To provide the RDdss manager insight into the assignment results, these measures have been incorporated into output representations, including summary statistics and detailed graphs. Each output provides both numerical and visual information. The numbers are used for quantitative comparisons. The graphical information provides a big picture view for use in a qualitative comparison.

As an example, consider the two fitness graphs in Figure 16. Both of these were produced using an RD1 file of 344 Marines and an BNA extract with school data covering a 120 day period. Below each graph is amplifying and numerical information. The bar chart on the left has a fit coefficient of 0 and a fill coefficient of 1. Additionally, its fitness premium is 28 (=128-100). The bar chart on the right has a coefficient of 1 for both fit and fill. Its fitness premium is 38 (=138-100). The fit numbers are quantitatively comparable. The fitness premium for the run on the right is 36% (=100% x [38-28]/28) better than the run on the left.

The above numerical analysis is also supported by visually comparing the bar charts. Notice the large number of blips falling below the fitness score of 100 on the left graph. Each blip represents a Marine, and there are actually 44 of them. Conversely, notice the comparatively small number of blips below 100 on the right graph. There are 21 of them. The visual comparison of the two graphs reveals the

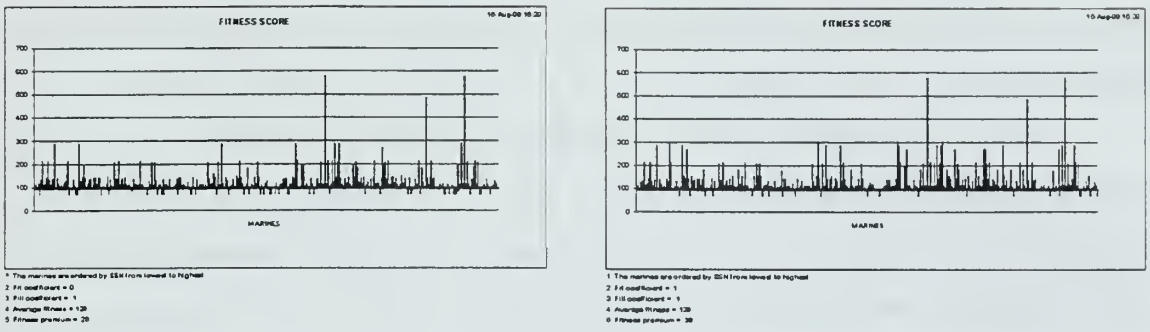


Figure 16. Two alternative results: Fit

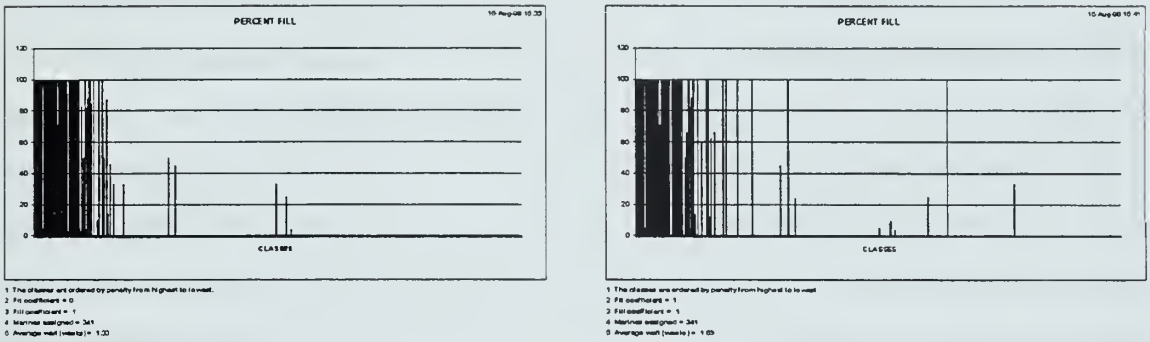


Figure 17. Two alternative results: Fill

qualitative difference. The graph on the right indicates a higher quality Marine-to-school fit. Of course, this supports the numerical comparison performed earlier.

As another example, consider the two fill graphs in Figure 17. These are based on the two model runs just described. In other words, the left graph has a fit coefficient of 0 and a fill coefficient of 1, and the right graph has a coefficient of 1 for both fit and fill.

Visually, these two graphs display an obvious difference. To appreciate how they are different requires an understanding of the significance of the blips. As note 1 of each graph indicates, "The classes are ordered by penalty from highest to lowest." Recall from Chapter III, this means the ordering is by class report date, starting with the earliest date. In other words, the bar chart on the left indicates almost every Marine will start school within the first three weeks. As discussed earlier, this is desirable. The bar chart on the right has its blips more spread out. So, by visually

comparing the two graphs, the left one has a higher quality with respect to minimizing wait time.

This is easily validated by the numbers given in note 5 of each graph. The average wait of a Marine from the left bar chart is 1.33 weeks, and the average wait from the other bar chart is 1.69 weeks. Now we quantitatively compare these values. The results from the left graph are 27% (=100% x [1.69-1.33]/1.33) better than the right.

In the following table, the results from three runs are given. The measures on the left are the four measures described earlier. Each run used the same 344 Marines and 120 days worth of school classes. The information for the first and third runs is from the two model runs discussed above. The second run was determined by "gaming" the system. In other words, we tried numerous combinations of the fit and fill coefficients until a "good" solution was found. Run 2 was the result. Understand though, we are not saying "best" solution. Only the USMC can determine what is best for them.

	Run 1 (fit=0; fill=1)	Run 2 (fit=1; fill=11)	Run 3 (fit=1; fill=1)
Unfilled Seats (1st week)	23	23	23
Unassigned Marines	3	3	3
Average Wait (weeks)	1.33	1.33	1.69
Fitness Premium	28	31	38

The reason we feel Run 2 is a "good" solution is based on a quantitative comparison of the measures and one additional piece of information. It is the fact the USMC feels it is more important to minimize wait time than to maximize the Marine-to-school fit. The remainder of this section explains how we decided Run 2 was a "good" solution.

Starting with the values for unfilled seats, it is obvious all three runs are equal. The same is true for the unassigned Marines measure. So, these two measures provide no insight for comparison purposes.

Concerning the average wait, the values of Runs 1 and 2 are equal. Further, their 1.33 value is numerically smaller than the 1.69 value of Run 3. This is good for Runs 1 and 2. As was proven earlier, a value of 1.33 is 27% better than 1.69.

Finally, there is the fitness premium measure. The first observation made is that Run 1 is a candidate for elimination. The reason is as follows. Run 2 has the same score as Run 1 for the first three measures in the table, but it shows an 11% (=100%x[31-28]/28) increase in the fitness premium. So, Run 1 is eliminated from the competition.

This leaves the last two runs. Run 3 shows a 23% (=100%x[38-31]/31) increase in fitness premium over Run 2. This creates a conflict. Run 3 has a 27% increase in average wait time, which is bad. Conversly, it has a 23% increase in fitness premium, which is good. To decide which solution is better, more information is necessary. This comes from the fact mentioned earlier, that the USMC feels it is more important to minimize wait time than to maximize the Marine-to-school fit.

We can now conclude Run 2 is a better solution than Run 3. Here is why. Run 2 minimizes average wait by 27% by giving up a 23% increase in Marine-to-school fit. This agrees with the USMC desire to more strongly emphasize a minimum waiting time. So, Run 2 is a better solution than Run 3. Since it also satisfies the known desires of the USMC, we feel it is a "good" solution as well.

E. OBJECTIVE COMPARISON OF OLD AND NEW SYSTEM SOLUTIONS

In the previous section, we described how a set of solutions generated by the RDdss are compared to determine a "good" solution. Using the same approach, we now demonstrate how to objectively compare the results from the old system with the new system. This provides the USMC a means of determining which system's solution is better, if either. Comparison of the new and old system results has been made easy by automating the importing of the RDM result into the RDdss.

We have summarized the important data for the old and new systems in the following table, based on the same 344 Marines and 120 days of school classes discussed earlier. Since the assignment algorithm for the RDM was designed to maximize fill, a run from the RDdss based strictly on fill has also been included. It is the run with a fit coefficient of 0, and a fill coefficient of 1. The last column, labeled "Run 2," is a "good" solution we found by gaming the RDdss.

	Run 1 (fit=0; fill=1)	RDM	Run 2 (fit=1; fill=10)
Unfilled Seats (1st week)	23	23	23
Unassigned Marines	3	3	3
Average Wait (weeks)	1.33	1.34	1.34
Fitness Premium	28	29	32

We start by objectively comparing the RDdss fill-based result with the RDM result. They are labeled "Run 1" and "RDM," respectively. As we shall prove, the RDdss has done a better job at filling early school seats than the RDM.

Of the four measures, only one provides any useful insight for this comparison. It is the average wait measure. The reason the other three do not apply is as follows. The first two measures have the same values, so they provide no insight. The last measure is not too meaningful, since Run 1 is strictly based on maximizing fill. In other words, it disregards fit because its fit coefficient is set to 0. This leaves the average wait measure.

A quantitative comparison of the average wait shows the RDdss solution is 1% (100%x[1.34-1.33]/1.33) better than the RDM solution. This is explainable by considering the approach used in each model. The RDM assignment algorithm maximizes the fill of early school seats by looking at each school in a sequential fashion. In contrast, the RDdss conducts a global comparison of Marines and schools. In other words, it goes through numerous iterations until it finds an optimal fill solution. This show that the RDM assignment algorithm is only closely approximating the optimized assignment result.

Finally, we "gamed" the new system until a "good" solution was found. This is Run 2. It has a fit coefficient of 1 and a fill coefficient of 10.

The objective comparison of the RDM and Run 2 solutions is straigtforward. Since the first three measures are the same for both results, they provide no insights. This leaves only the fitness premium measure. A quantitative comparison of this measure shows Run 2 has a 10% (100%x[32-29]/29) better solution than RDM. This shows the benefit of "gaming" the RDdss.

F. SUMMARY

This relatively long chapter covered some important points related specifically to the RDdss. The architectural components of the new system were discussed first, followed by the steps taken to actually build this DSS. Then, from an operational point of view, using the RDdss was discussed. This included setting up a run, executing the model, and customizing a run for determining a "good" solution. Next, two innovations were discussed in great detail. These included the date change innovation and the analyzing model results innovation. Finally, a means of objectively comparing the solution from the old and new systems was discussed.

We truly believe the innovations and capabilites introduced by this prototype can greatly benefit the USMC's Marine Enlisted Assignments branch. It can help the USMC to more effectively accomplish its mission as stated by the Commandant of the Marine Corp, "to put the right Marine in the right place at the right time with the right skills and quality of life."

V. CONCLUSION

This concluding chapter has three short sections, followed by a final comment. In the first section, we reiterate the significant contributions made in the thesis. This is followed by a brief description of some lessons we learned. Then, some recommended improvements for the prototype are given. Following this last section, we comment on how this thesis work might benefit the other branches of the United States military.

A. SIGNIFICANT CONTRIBUTIONS

Four significant contributions beneficial to the USMC were made in this thesis. These were discussed in detail in the previous three chapters. A list and summary of the contributions is given here.

- Analysis and articulation of the recruit distribution process - by interviewing USMC and DSAI personnel, reviewing available documentation, and operating the RDM we were able to articulate an understanding of the recruit distribution process using IDEF process modeling. Additional data modeling was articulated in a third normal form relational schema.
- Development of a mathematical model - by analyzing the assignment process, criteria, and constraints, USMC policies and objectives, a mathematical model for the new system was developed.
- Fully functional prototype - an intuitive and easy to understand new system that seamlessly interfaces with the old system was built. It provides an objective means of comparing assignment results of both systems, and was developed using COTS software applications.
- Elimination of the proprietary solver and associated contractor lock-in - this was accomplished by replacing the proprietary solver with two COTS applications.

B. LESSONS LEARNED

Our original goal was to build an As-Is IDEF0 model of the RDM, about two months after starting the thesis. This worked out fine. The next goal was to take

another six weeks to develop a To-Be IDEF0 model [Ref. 1]. This did not work out, for two reasons. First, our understanding of the entire recruit distribution process was still not mature enough to build the To-Be model. Nearly half a year was spent just thinking about its many details. Second, it is nearly impossible to envision the new system without first knowing the capabilities and limitations of the application used to build the prototype. One extreme envisions the impossible, while the other barely touches the reengineered system's potential. *The lesson learned from this was that properly reengineering a process requires two things. A detailed understanding of the current process environment, and a good working knowledge of the capabilities and limitations of the application used to build the prototype.*

Getting feedback from the Marine Enlisted Assignments branch was not always easy. Correspondence normally occured by e-mail. There was an inverse relationship between the number of questions asked and the number of answers given. As the one increased, the other decreased. *So, another lesson learned was that it is best to limit each correspondance to a question or two.*

While writing code, it is best to simultaneously document the code's purpose. Going back and trying to provide documentation at the end is too frustrating. This requires a considerable amount of discipline, but is well worth the effort. *The lesson learned here is document as you code.*

C. PROTOTYPE IMPROVEMENTS

A big part of this thesis involved the building and refinement of the prototype. The following topics are areas where the RDdss could use improvements.

1. Speed Improvements

a. Preprocessing Data

Of all the steps necessary to complete a run of the RDdss, the preprocessing step is the most time consuming. For the 344 Marines and approximately 500 school classes analyzed in this thesis, it takes about 30 minutes to preprocess

this data. This is about ten times longer than the assignment model takes to find an optimal solution. As the size of the preprocessing data is doubled, so is the time needed to preprocess it. Finding a way to speed up this process is desirable. One possibility is to find a way to perform all the preprocessing in main memory, with only two accesses to the hard drive. The first access is to get the necessary Marine and school data. The second is to write the preprocessed results back to the hard drive.

b. Analyzing Result

Compared to all other forms and switchboards in the RDdss, opening the "analyze results" forms is the most time intensive. With the 344 Marines and approximately 500 school classes, it takes just under a minute for any of these three to open. This feels like an eternity when you are in a hurry. The reason it takes so long is the creation of temporary tables, numerous calculations and comparisons, and retrieving of data from flat files. Finding a way to reduce this time is desirable. One possibility is to create another form which would contain only the four objective measures. Currently, the RDdss manager must go to two different forms for this information. Each containing information and displays in addition to the objective measures, which slow them down.

2. Multiple Solution Storage

Currently, the prototype will only save the results of one solution. This means the RDdss manager must either print-out hard copies of the graphs, or manually write down each solution's objective measures for comparison with other runs. An improvement here should allow the storage of at least three solutions. This would permit the RDdss manager to easily compare each solution. He or she could then eliminate one or two undesirable solutions, while continuing to search for a "good" one.

3. Administration Switchboard

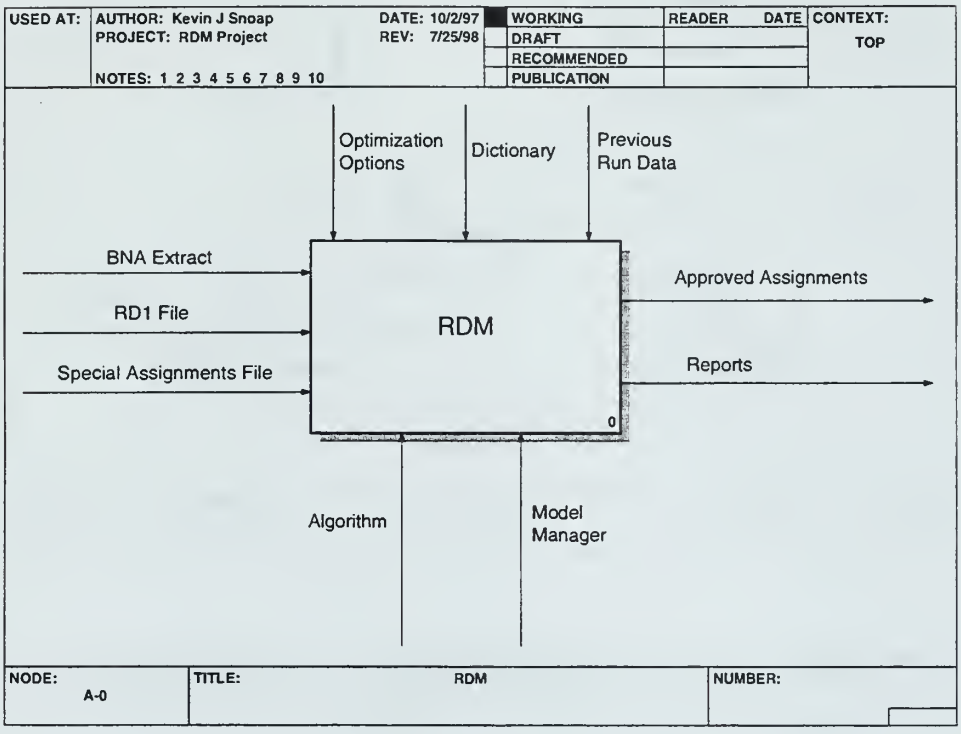
To look at all the schools or properties in one display, the RDdss manager must open up the associated school or property table. A reason for doing this is system administration. For instance, if a supervisor is auditing the RDdss's property data, looking at all the data at one time is convenient. A simple way of including this feature is by adding another switchboard. The switchboard's buttons would have VBA code associated with them, causing the desired tables to open.

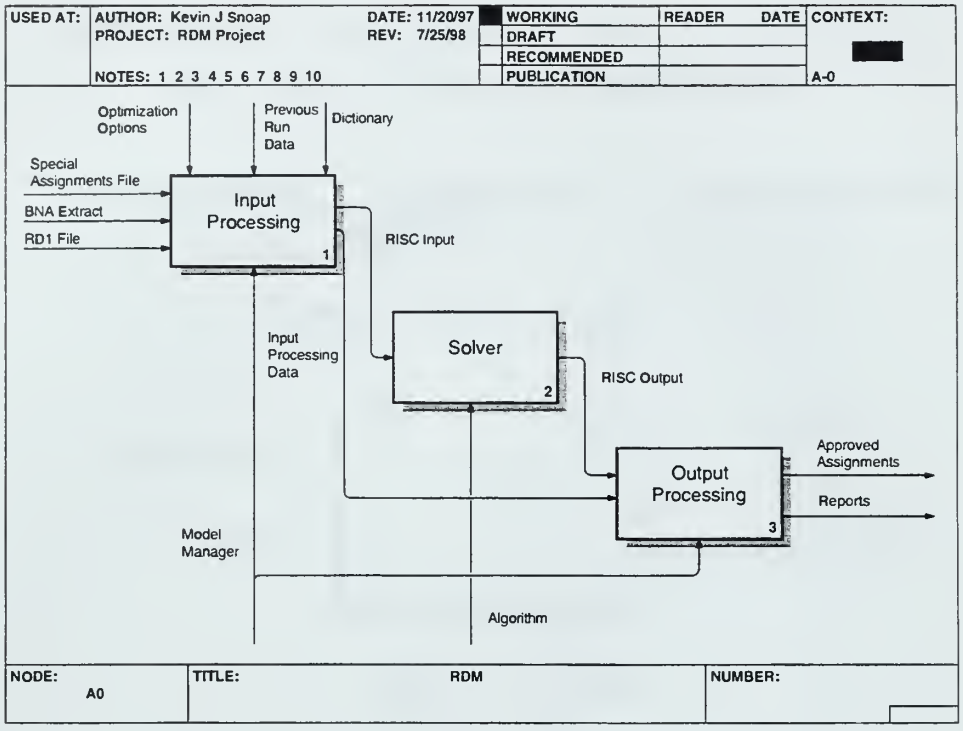
Any benefits derived from this thesis work were specifically aimed at the USMC. However, it does not have to end there. Like the USMC, other branches of the United States military must deal with the problem of how best to assign their service members to schools. Since all the services require their enlisted personnel to take the ASVAB test, the approach used in our prototype might prove an ideal solution. Further, our efforts may also contribute to the reengineering of other assignment models. So, this thesis work could actually benefit all branches of the United States military.

APPENDIX A. ACRONYMS

Acronym=>	Meaning
AMPL	A Modeling Language for Mathematical Programming
ARMS	Automated Recruit Management System
ASVAB	Armed Services Vocational Aptitude Battery
BNA	By Name Assignment System
BPWin	Business Process for Windows
COTS	Commercial-off-the-shelf
CPlex	Optimization Package for Complex Linear, Network and Integer Programming
DSAI	Decision Support Associates, Inc.
DSS	Decision Support System
ELS	Entry Level School
ICOM	Input, Control, Output, Mechanism
IDEF	Defense Institute Modeling
IDEF0	Business Process Modeling
MCRD	Marine Corps Recruit Depot
MCT	Marine Combat Training
MODS	Military Operational Data Store
MOS	Military Occupational Specialty
PEF	Program Enlisted For
RD1	Recruit Distribution Input File
RD3	Recruit Distribution Output File
RDdss	Recruit Distribution Decision Support System
RDM	Recruit Distribution Model
USMC	United States Marine Corps
VBA	Visual Basic for Applications

APPENDIX B. AS-IS RD BUSINESS PROCESS (IDEF0) MODEL

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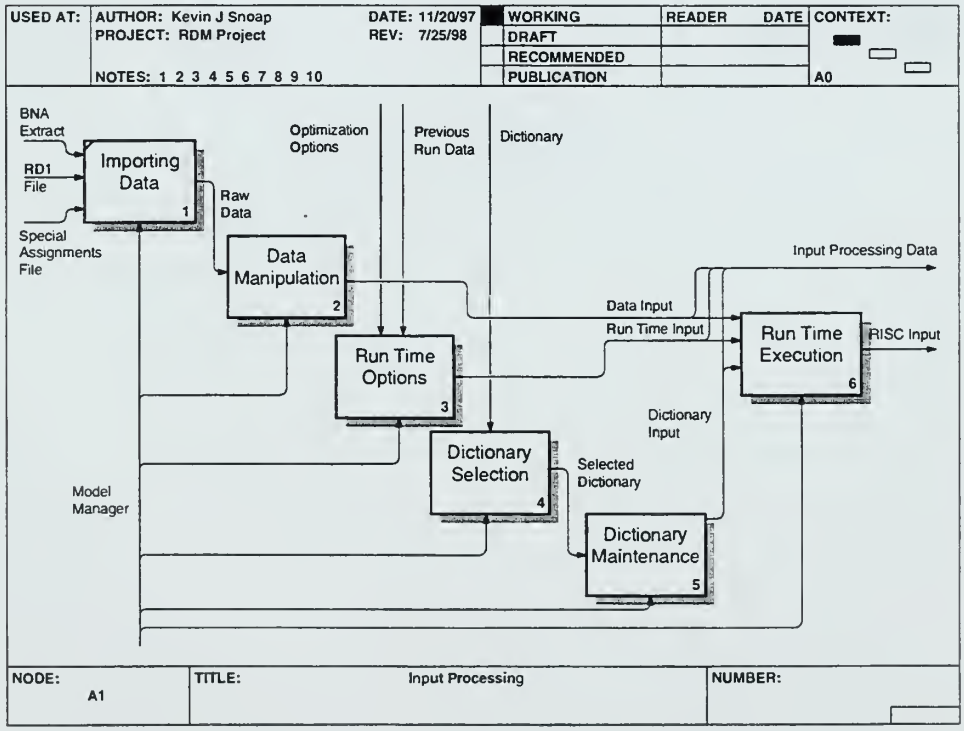
Previous Run Data
Dictionary
Special Assignments File
BNA Extract
RD1 File
Input Processing
1
RISC Input
Input Processing Data
Solver
2
RISC Output
Output Processing
3
Approved Assignments
Reports
Model Manager
Algorithm
NODE:
A0
TITLE:
RDM
NUMBER: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BNA Extract
RD1 File
Special Assignments File
Importing Data
1
Raw Data
Optimization Options
Previous Run Data
Dictionary
Data Manipulation
2
Input Processing Data
Data Input
Run Time Input
Run Time Options
3
Run Time Execution
6
RISC Input
Dictionary Input
Dictionary Selection
4
Selected Dictionary
Model Manager
Dictionary Maintenance
5
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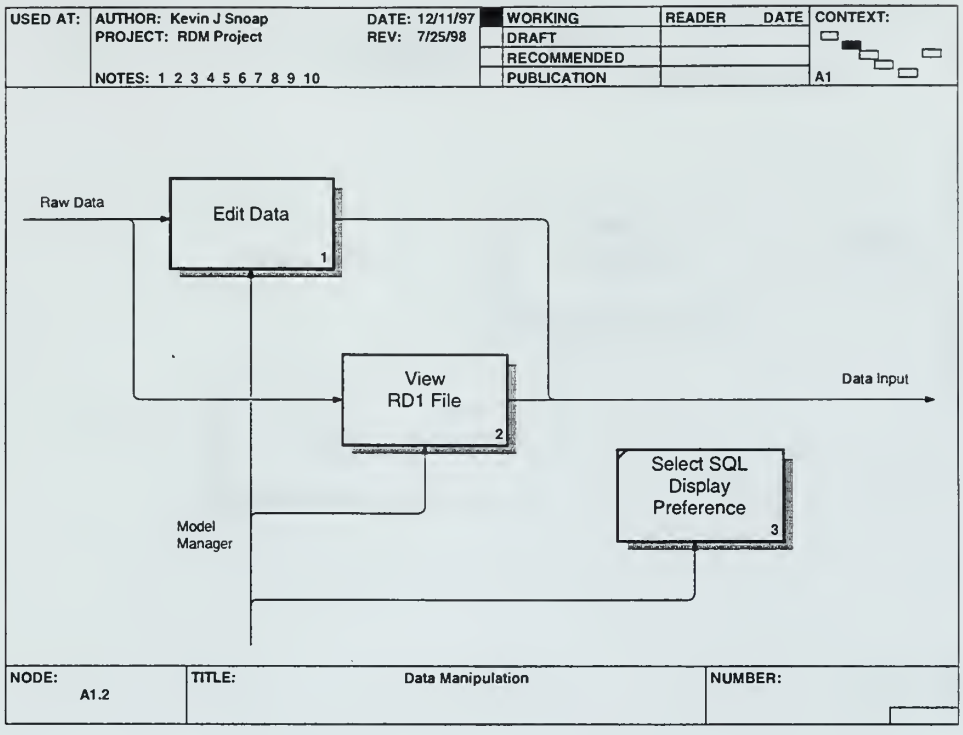
Input Processing
NUMBER: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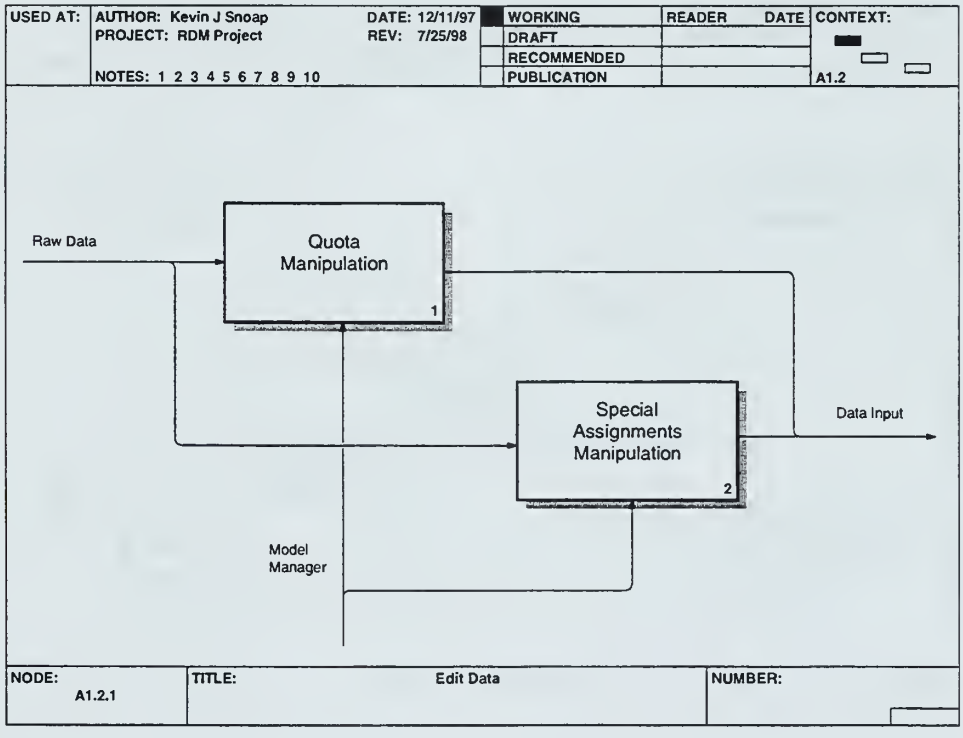
A1
Raw Data
Edit Data
1
View
RD1 File
2
Select SQL
Display
Preference
3
Data Input
Model
Manager
NODE:
A1.2
TITLE:
Data Manipulation
NUMBER: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CONTEXT:
A1.2
Raw Data
Quota
Manipulation
1
Special
Assignments
Manipulation
2
Data Input
Model
Manager
NODE:
A1.2.1
TITLE:
Edit Data
NUMBER:

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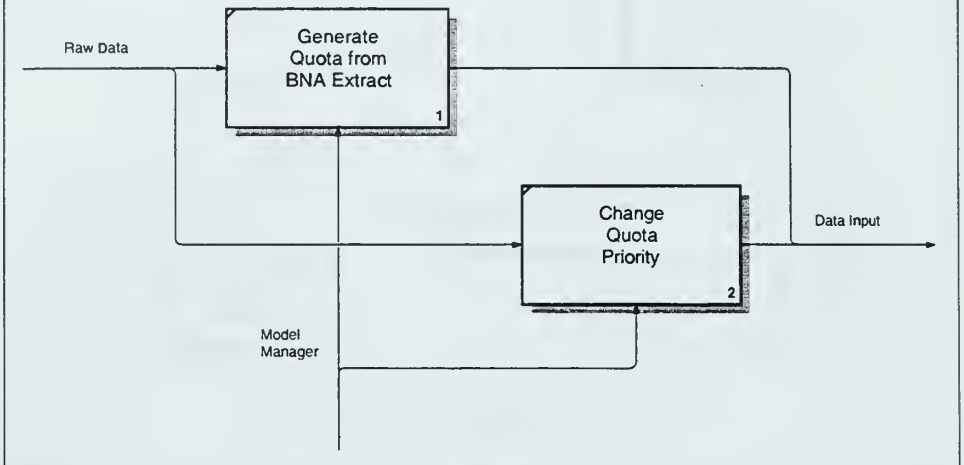

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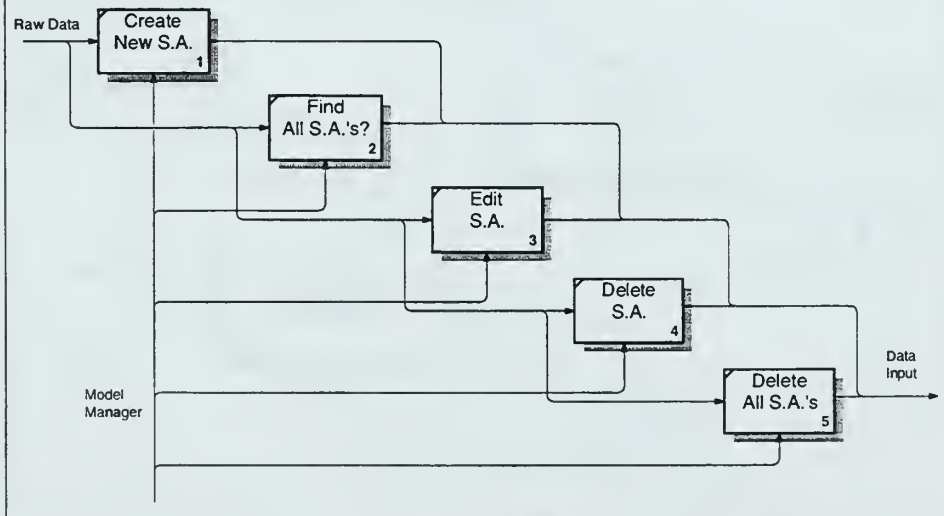

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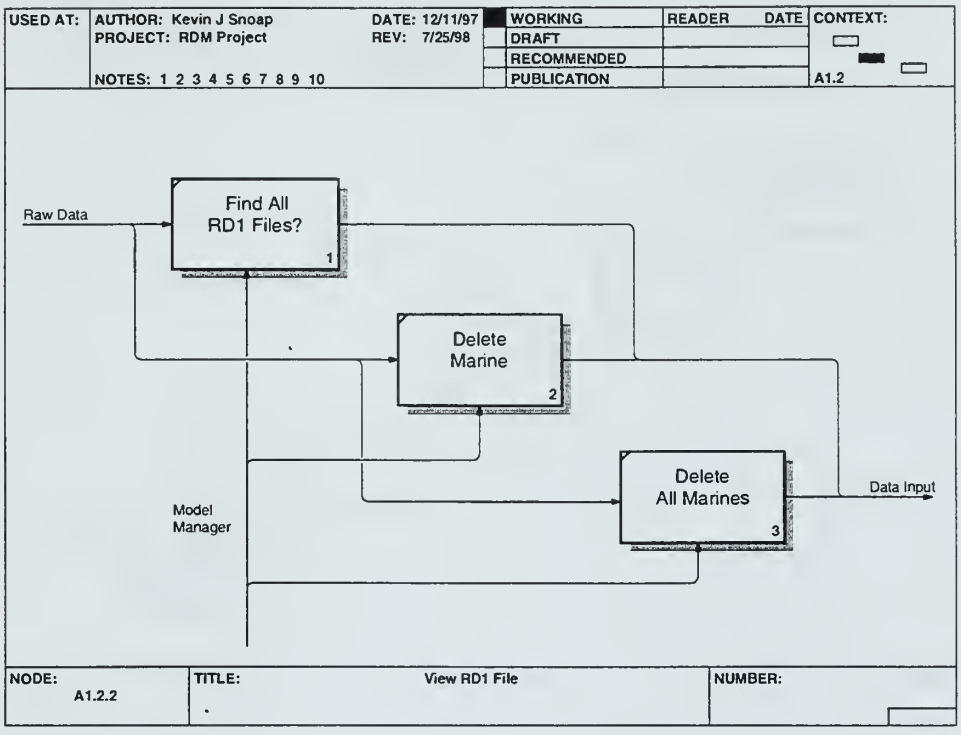
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Raw Data
Find All RD1 Files?
1
Delete Marine
2
Delete All Marines
3
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Model Manager
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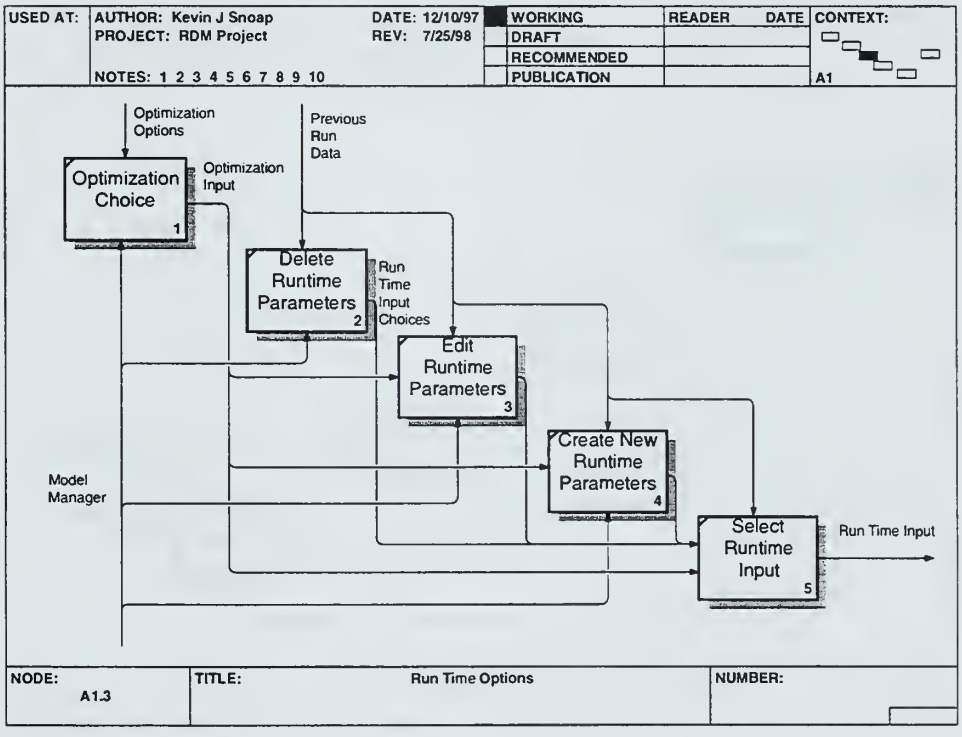
View RD1 File
NUMBER: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Optimization Options
Previous Run Data
Optimization Choice
1
Optimization Input
Delete Runtime Parameters
2
Run Time Input Choices
Edit Runtime Parameters
3
Create New Runtime Parameters
4
Select Runtime Input
5
Run Time Input
Model Manager
NODE:
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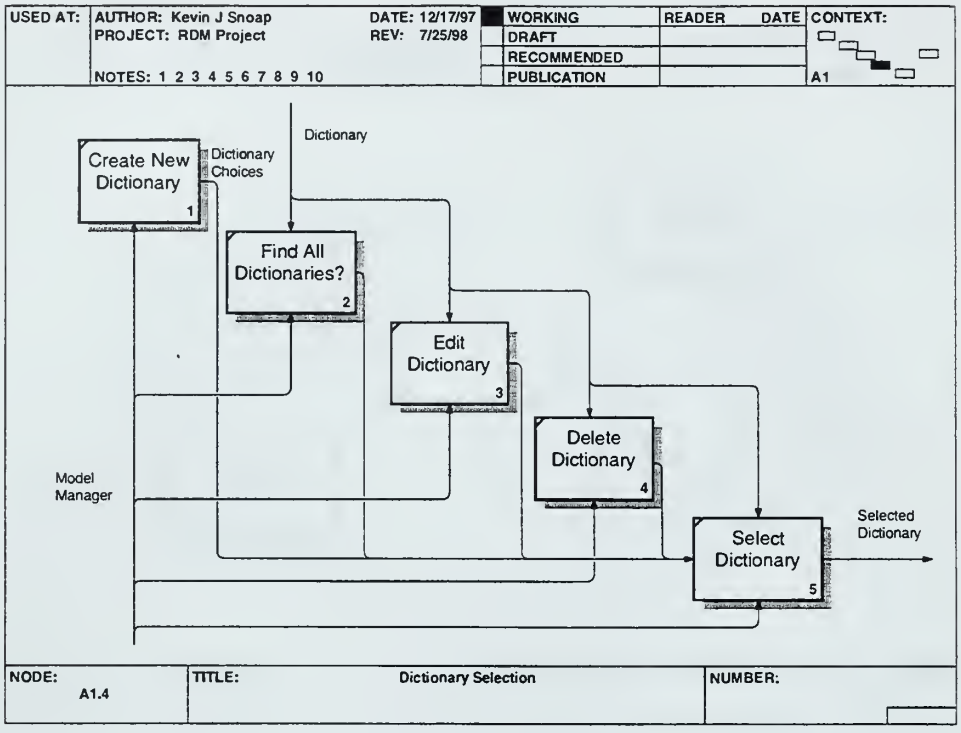
TITLE:
Run Time Options
NUMBER: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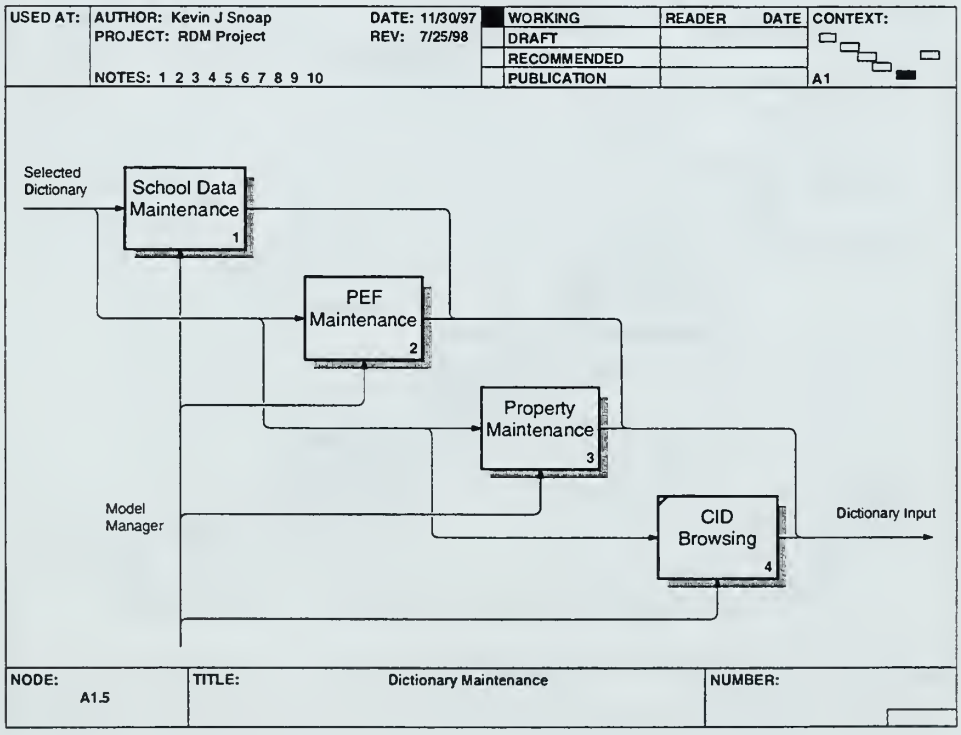
CONTEXT:
A1
Create New Dictionary 1
Dictionary Choices
Dictionary
Find All Dictionaries? 2
Edit Dictionary 3
Delete Dictionary 4
Select Dictionary 5
Model Manager
Selected Dictionary
NODE: A1.4
TITLE: Dictionary Selection
NUMBER: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School Data Maintenance 1
PEF Maintenance 2
Property Maintenance 3
CID Browsing 4
Model Manager
Dictionary Input
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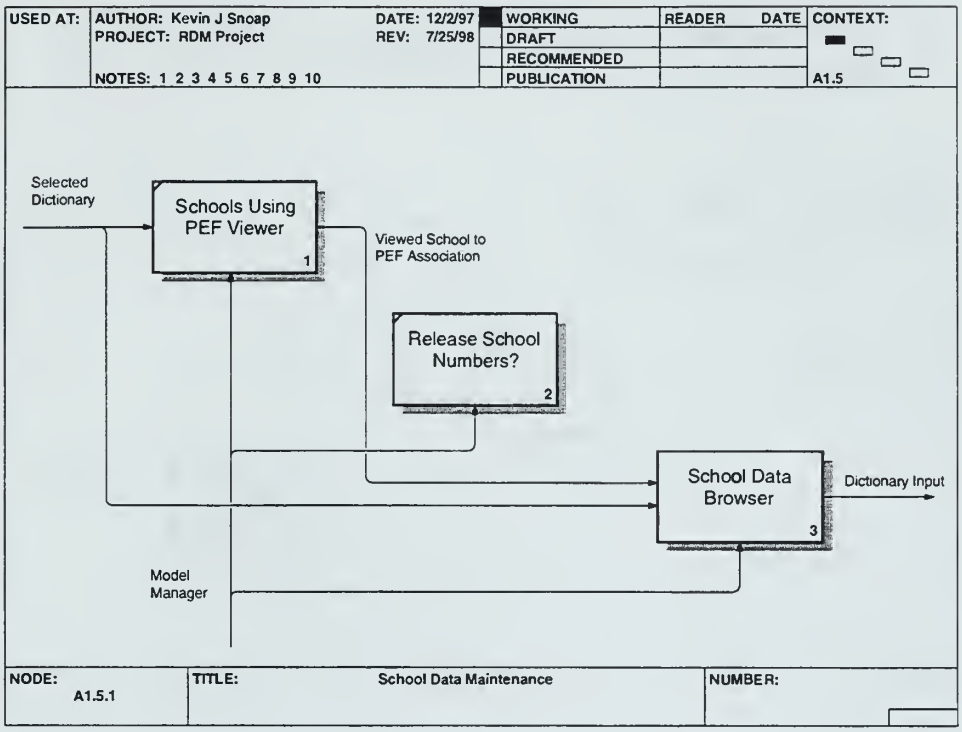
TITLE: Dictionary Maintenance
NUMBER: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RECOMMENDED
PUBLICATION
READER DATE
CONTEXT:
A1.5
Selected Dictionary
Schools Using PEF Viewer
1
Viewed School to PEF Association
Release School Numbers?
2
School Data Browser
3
Dictionary Input
Model Manager
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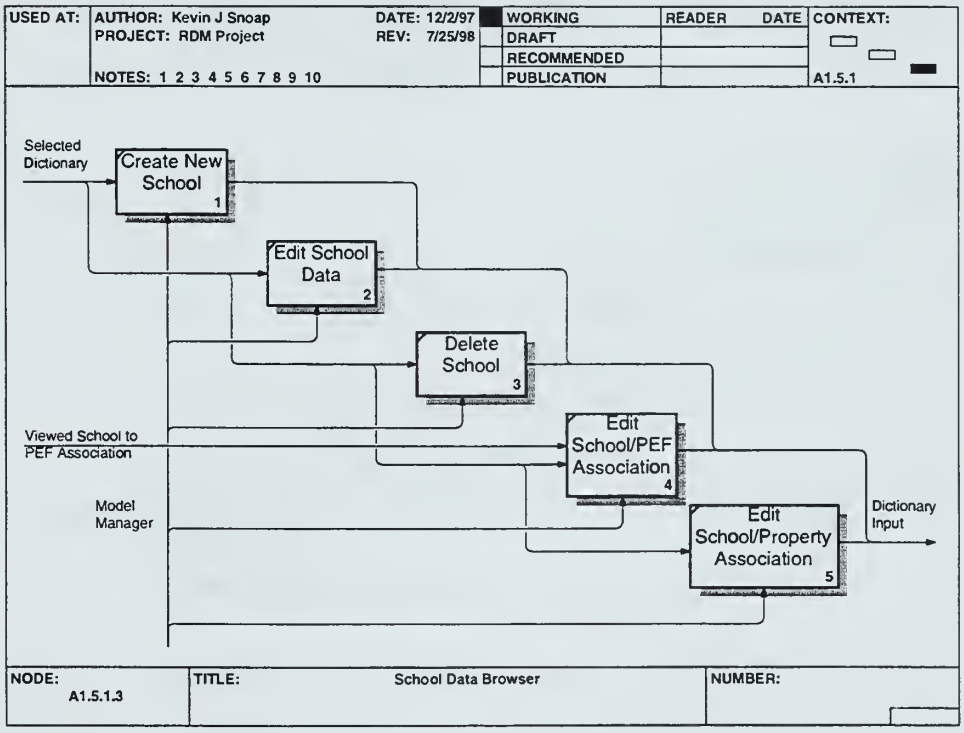
TITLE:
School Data Maintenance
NUMBER: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PUBLICATION
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CONTEXT:
A1.5.1
Selected Dictionary
Create New School
1
Edit School Data
2
Delete School
3
Viewed School to PEF Association
Edit School/PEF Association
4
Model Manager
Edit School/Property Association
5
Dictionary Input
NODE:
A1.5.1.3
TITLE:
School Data Browser
NUMBER:

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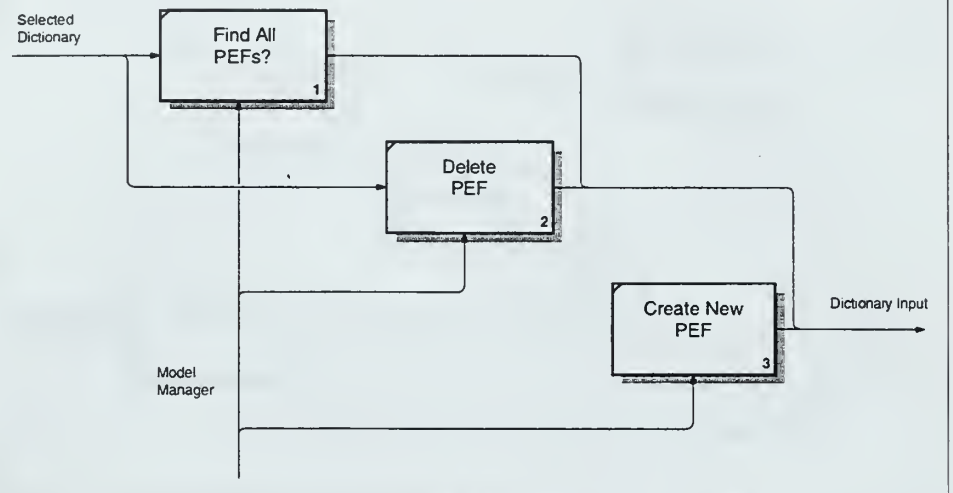

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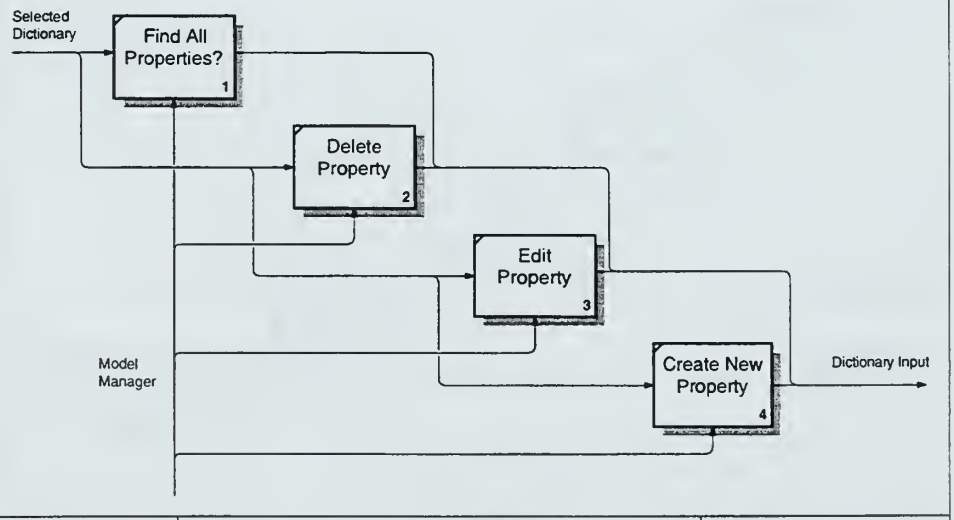

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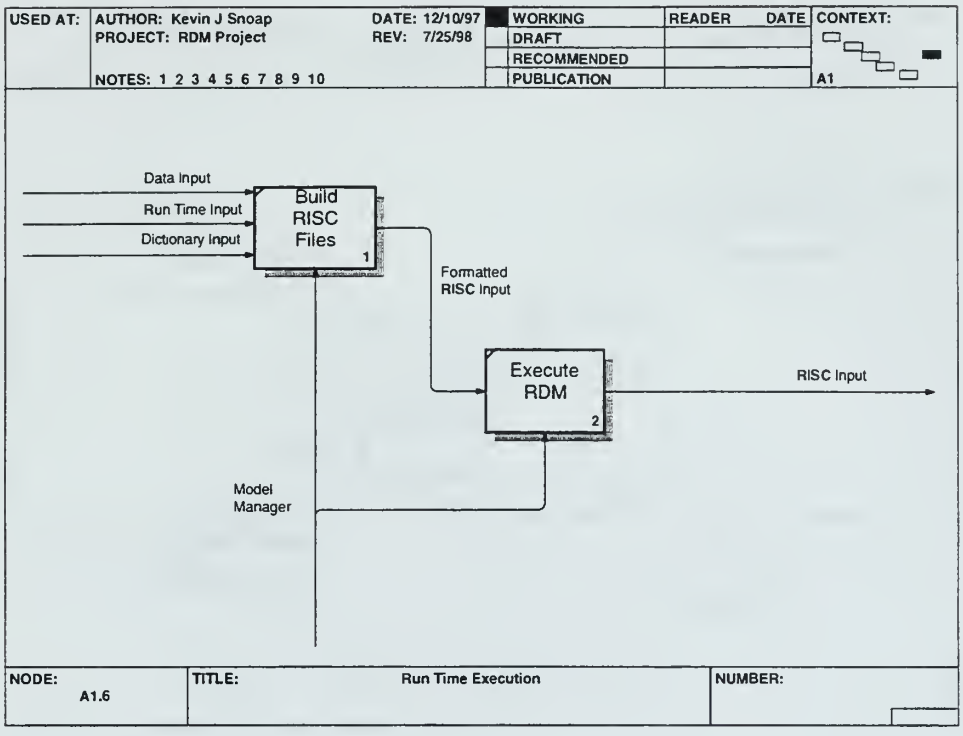
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RECOMMENDED
PUBLICATION
READER DATE
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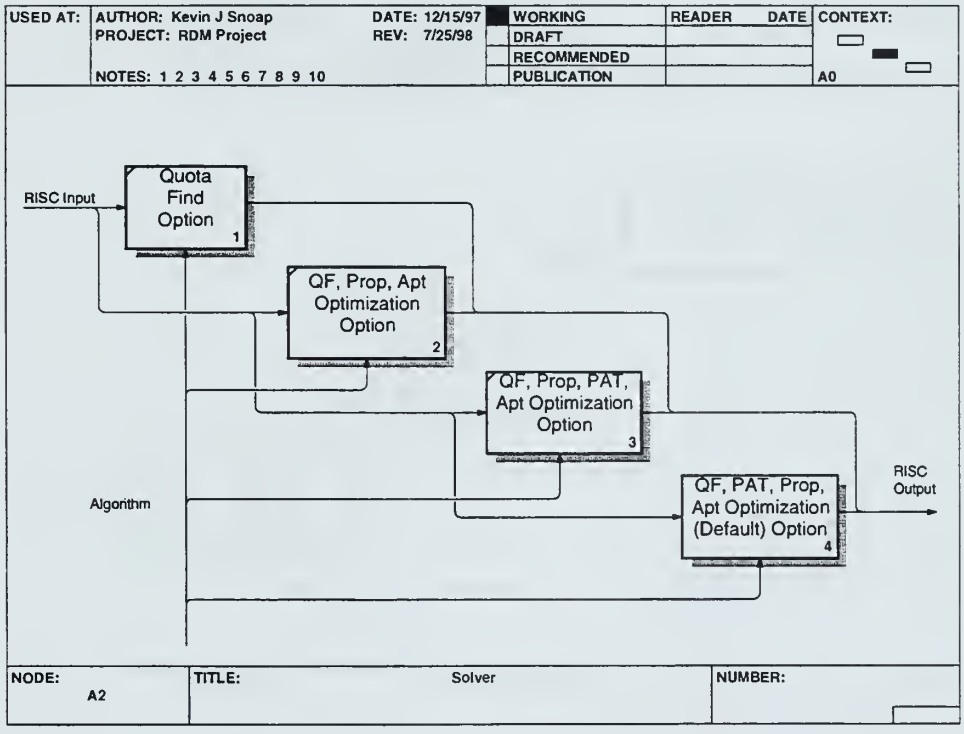
A1
Data Input
Run Time Input
Dictionary Input
Build RISC Files
1
Formatted RISC Input
Execute RDM
2
RISC Input
Model Manager
NODE:
A1.6
TITLE:
Run Time Execution
NUMBER: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DRAFT
RECOMMENDED
PUBLICATION
READER DATE
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A0
RISC Input
Quota Find Option
1
QF, Prop, Apt Optimization Option
2
QF, Prop, PAT, Apt Optimization Option
3
QF, PAT, Prop, Apt Optimization (Default) Option
4
RISC Output
Algorithm
NODE:
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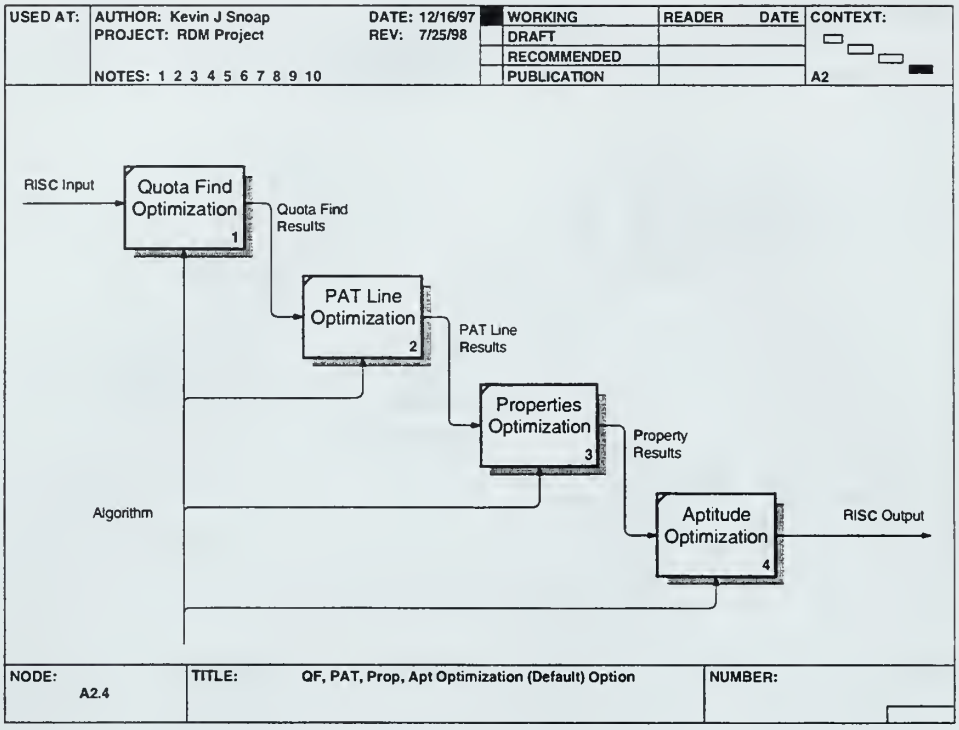
TITLE:
Solver
NUMBER: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RECOMMENDED
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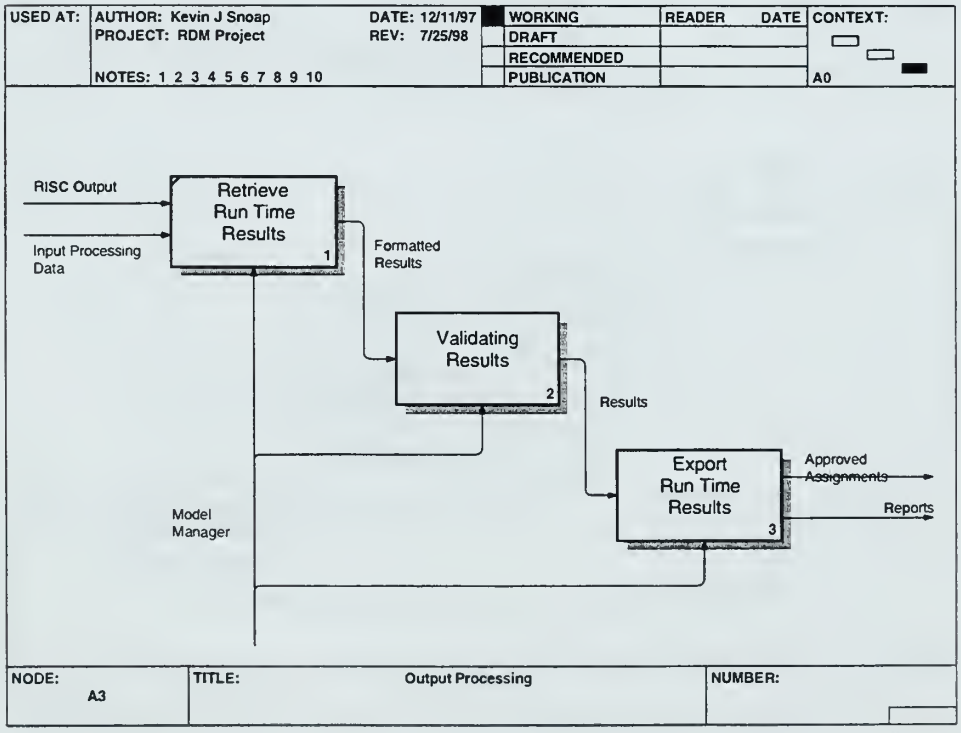
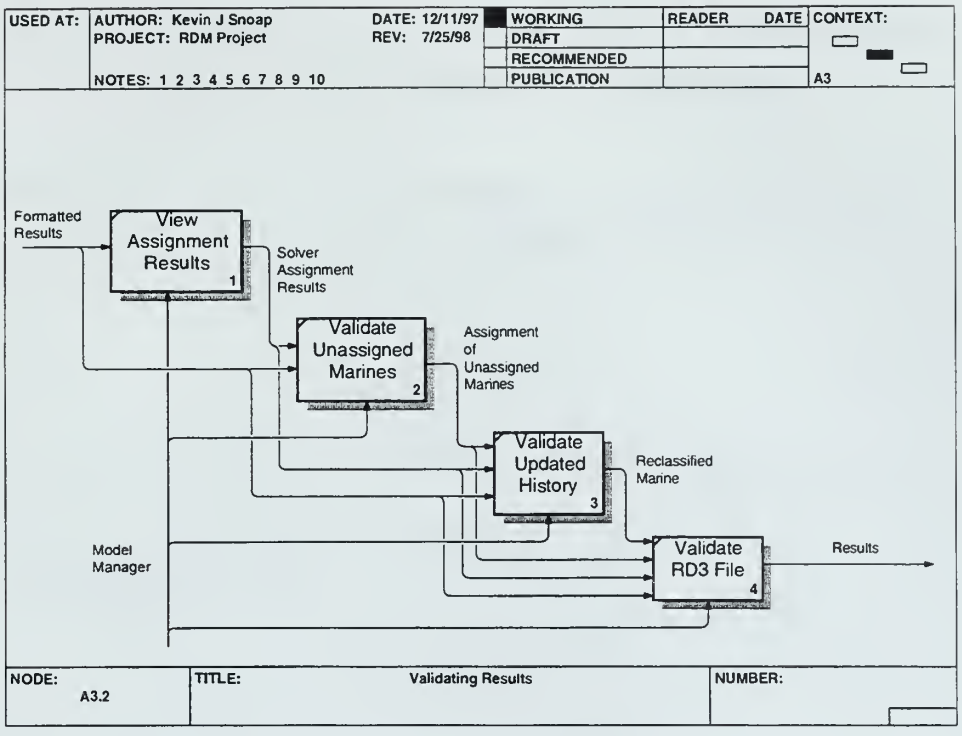
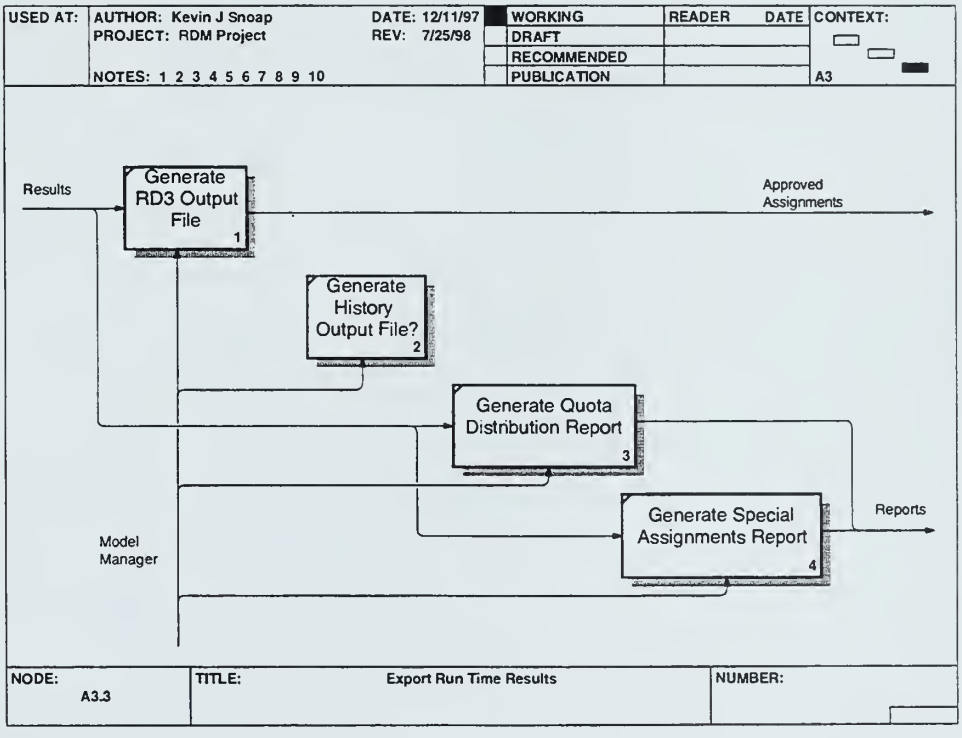
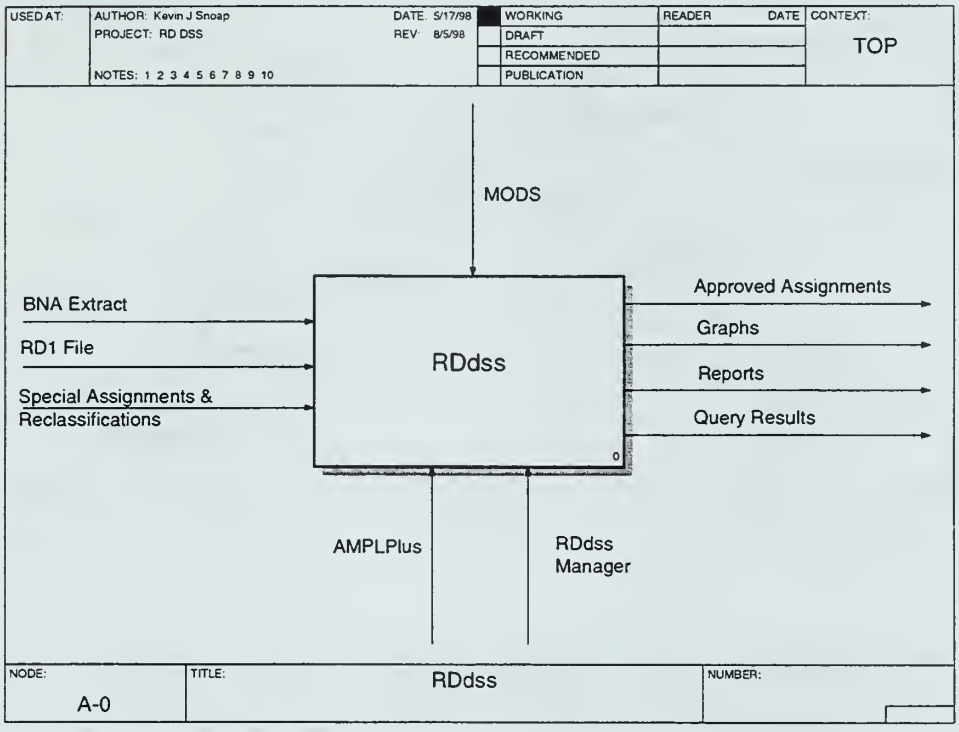
CONTEXT:
A2
RISC Input
Quota Find Optimization
1
Quota Find Results
PAT Line Optimization
2
PAT Line Results
Properties Optimization
3
Property Results
Aptitude Optimization
4
RISC Output
Algorithm
NODE:
A2.4
TITLE:
QF, PAT, Prop, Apt Optimization (Default) Option
NUMBER:

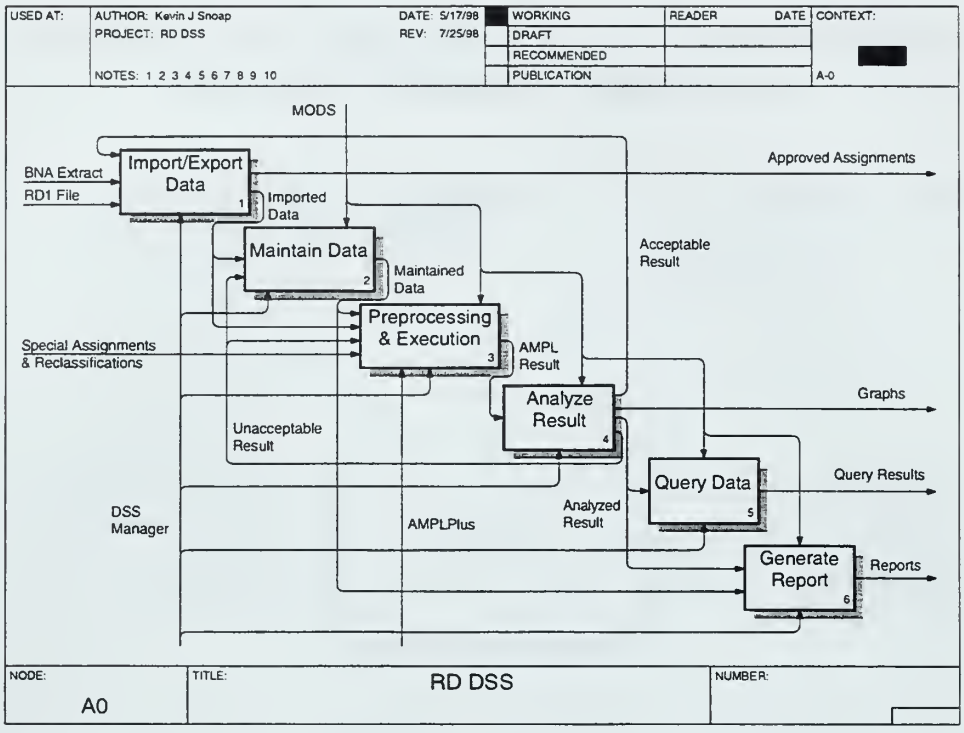

USED AT:
AUTHOR: Kevin J Snoap
PROJECT: RDM Project
DATE: 12/11/97
REV: 7/25/98
NOTES: 1 2 3 4 5 6 7 8 9 10
WORKING
DRAFT
RECOMMENDED
PUBLICATION
READER
DATE
CONTEXT:
A0
RISC Output
Input Processing Data
Retrieve Run Time Results
1
Formatted Results
Validating Results
2
Results
Export Run Time Results
3
Approved Assignments
Reports
Model Manager
NODE:
A3
TITLE:
Output Processing
NUMBER:

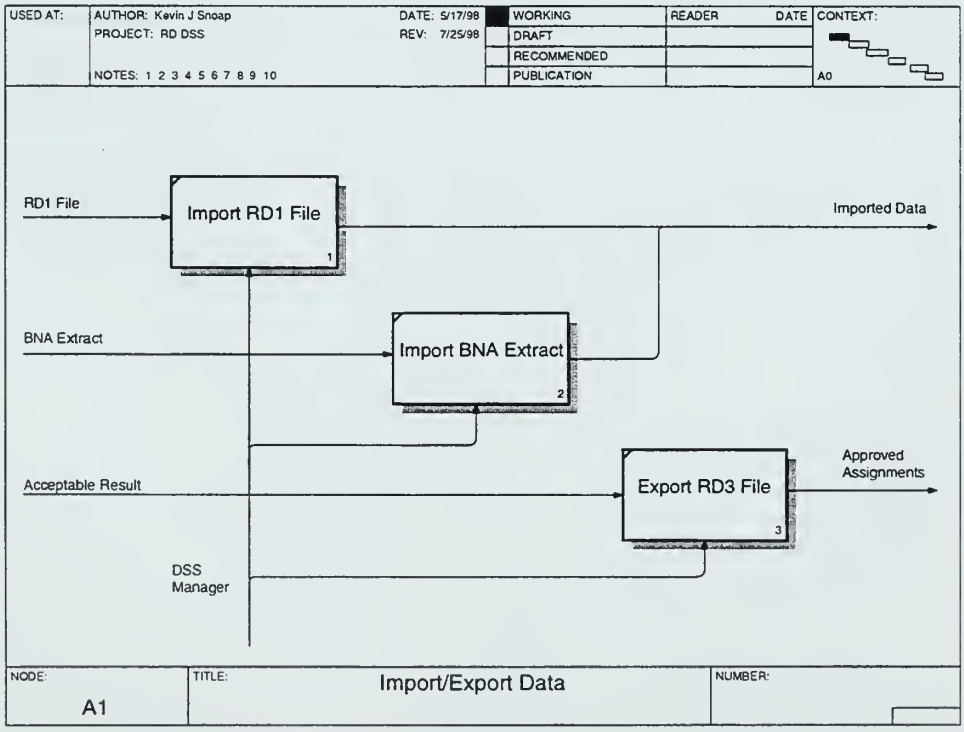

USED AT:
AUTHOR: Kevin J Snoap
PROJECT: RDM Project
DATE: 12/11/97
REV: 7/25/98
NOTES: 1 2 3 4 5 6 7 8 9 10
WORKING
DRAFT
RECOMMENDED
PUBLICATION
READER DATE
CONTEXT:
A3
Formatted Results
View Assignment Results 1
Solver Assignment Results
Validate Unassigned Marines 2
Assignment of Unassigned Marines
Validate Updated History 3
Reclassified Marine
Model Manager
Validate RD3 File 4
Results
NODE: A3.2
TITLE: Validating Results
NUMBER:

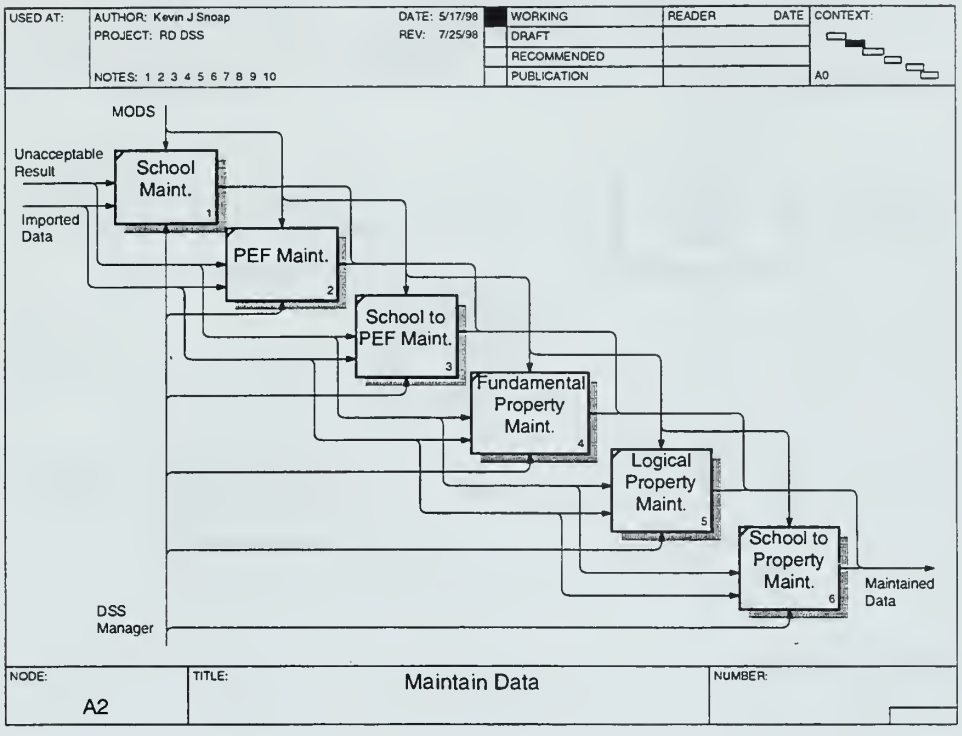

USED AT:
AUTHOR: Kevin J Snoap
PROJECT: RDM Project
DATE: 12/11/97
REV: 7/25/98
NOTES: 1 2 3 4 5 6 7 8 9 10
WORKING
DRAFT
RECOMMENDED
PUBLICATION
READER DATE
CONTEXT:
A3
Results
Generate RD3 Output File 1
Approved Assignments
Generate History Output File? 2
Generate Quota Distribution Report 3
Generate Special Assignments Report 4
Reports
Model Manager
NODE: A3.3
TITLE: Export Run Time Results
NUMBER:

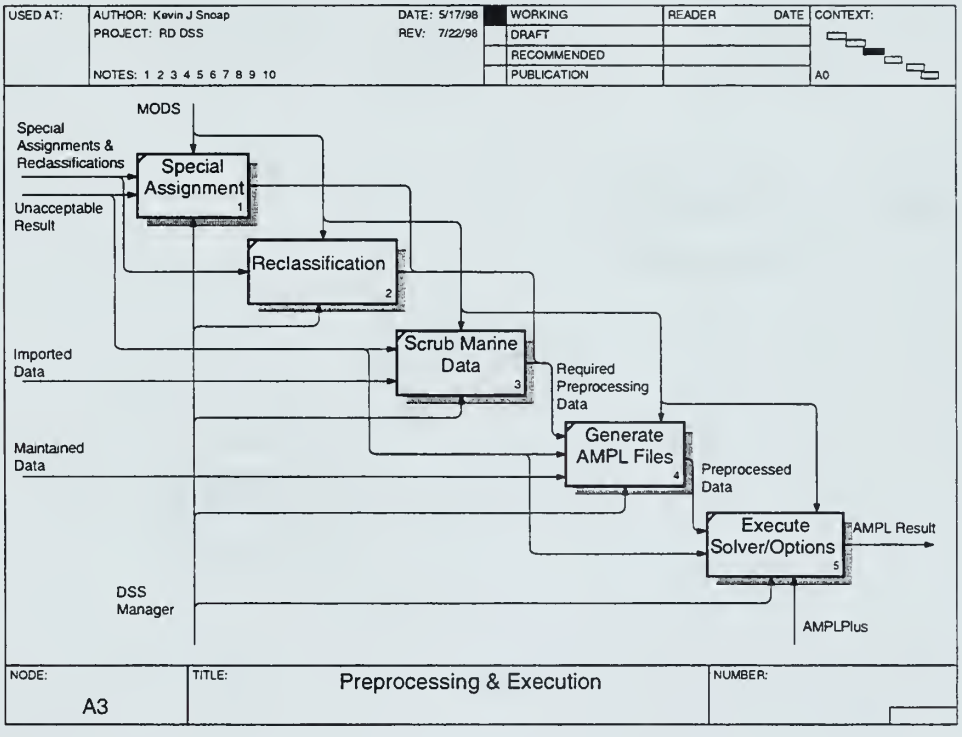
APPENDIX C. TO-BE RD BUSINESS PROCESS (IDEF0) MODEL

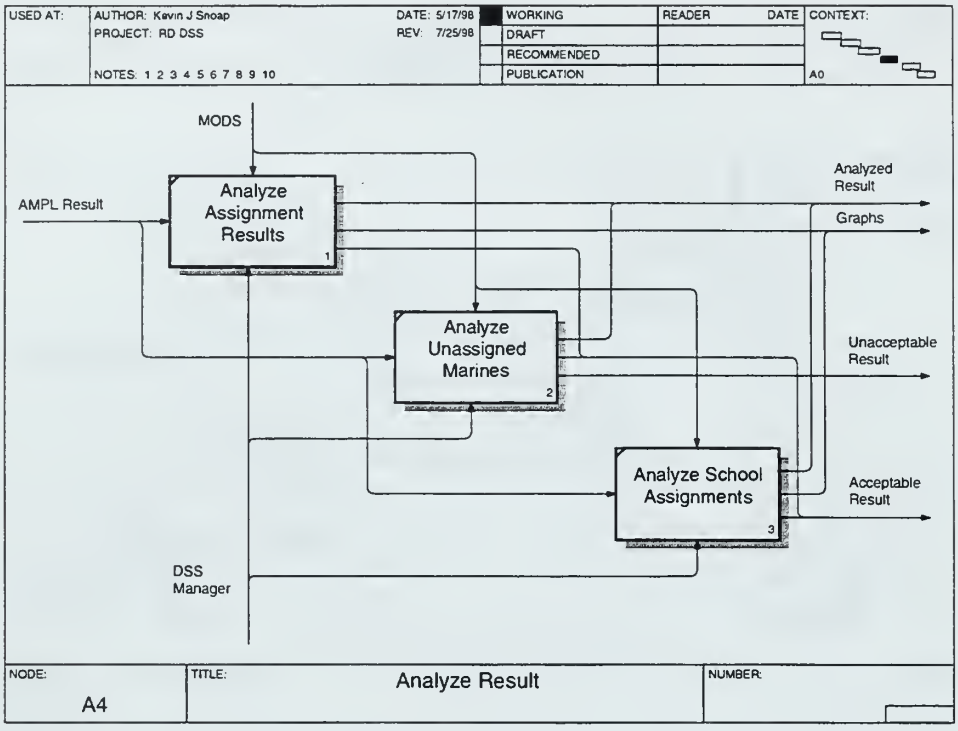


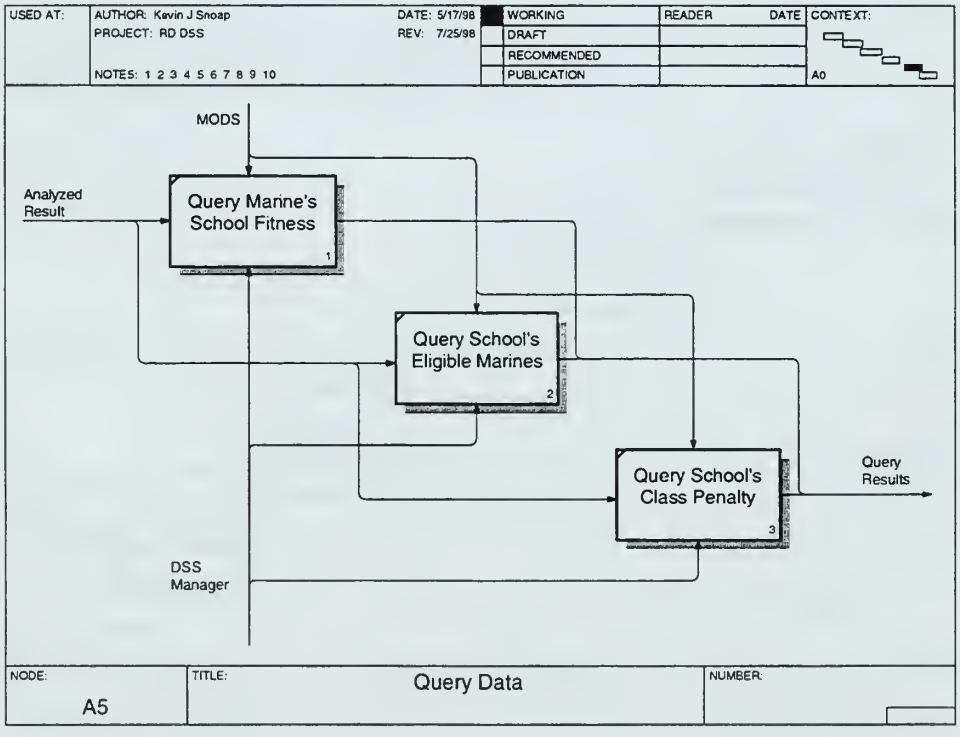

USED AT:
AUTHOR: Kevin J Snoap
PROJECT: RD DSS
NOTES: 1 2 3 4 5 6 7 8 9 10
DATE: 5/17/98
REV: 7/25/98
WORKING
DRAFT
RECOMMENDED
PUBLICATION
READER
DATE
CONTEXT:
A-0
MODS
BNA Extract
RD1 File
Import/Export Data
1
Imported Data
Approved Assignments
Maintain Data
2
Maintained Data
Acceptable Result
Preprocessing & Execution
3
AMPL Result
Special Assignments & Reclassifications
Analyze Result
4
Graphs
Unacceptable Result
Query Data
5
Query Results
DSS Manager
AMPLPlus
Analyzed Result
Generate Report
6
Reports
NODE:
A0
TITLE:
RD DSS
NUMBER:

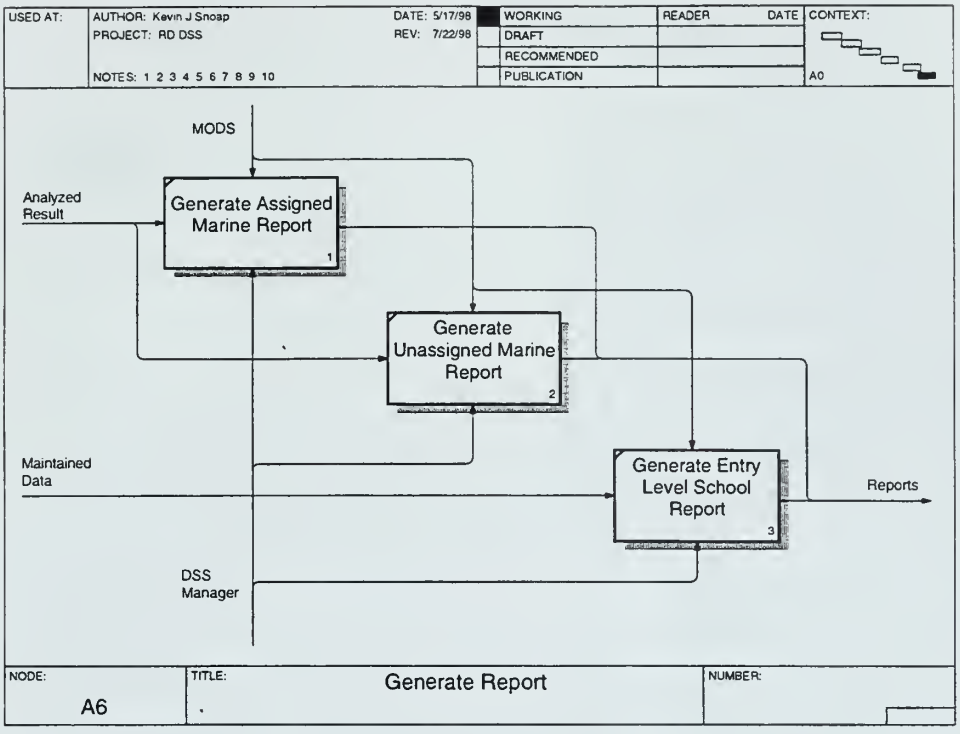

USED AT:
AUTHOR: Kevin J Snoap
PROJECT: RD DSS
NOTES: 1 2 3 4 5 6 7 8 9 10
DATE: 5/17/98
REV: 7/25/98
WORKING
DRAFT
RECOMMENDED
PUBLICATION
READER
DATE
CONTEXT:
A0
RD1 File
Import RD1 File
1
Imported Data
BNA Extract
Import BNA Extract
2
Acceptable Result
Export RD3 File
3
Approved Assignments
DSS Manager
NODE:
A1
TITLE:
Import/Export Data
NUMBER:


USED AT:
AUTHOR: Kevin J Snoap
PROJECT: RD DSS
NOTES: 1 2 3 4 5 6 7 8 9 10
DATE: 5/17/98
REV: 7/25/98
WORKING
DRAFT
RECOMMENDED
PUBLICATION
READER
DATE
CONTEXT:
A0
MODS
Unacceptable Result
Imported Data
School Maint. 1
PEF Maint. 2
School to PEF Maint. 3
Fundamental Property Maint. 4
Logical Property Maint. 5
School to Property Maint. 6
Maintained Data
DSS Manager
NODE:
A2
TITLE:
Maintain Data
NUMBER:


USED AT:
AUTHOR: Kevin J Snoap
PROJECT: RD DSS
NOTES: 1 2 3 4 5 6 7 8 9 10
DATE: 5/17/98
REV: 7/22/98
WORKING
DRAFT
RECOMMENDED
PUBLICATION
READER
DATE
CONTEXT:
A0
MODS
Special Assignments & Reclassifications
Special Assignment 1
Unacceptable Result
Reclassification 2
Imported Data
Scrub Marine Data 3
Required Preprocessing Data
Maintained Data
Generate AMPL Files 4
Preprocessed Data
Execute Solver/Options 5
AMPL Result
DSS Manager
AMPLPlus
NODE:
A3
TITLE:
Preprocessing & Execution
NUMBER:


USED AT:
AUTHOR: Kevin J Snoap
PROJECT: RD DSS
NOTES: 1 2 3 4 5 6 7 8 9 10
DATE: 5/17/98
REV: 7/25/98
WORKING
DRAFT
RECOMMENDED
PUBLICATION
READER
DATE
CONTEXT:
A0
MODS
AMPL Result
Analyze Assignment Results
1
Analyze Unassigned Marines
2
Analyze School Assignments
3
Analyzed Result
Graphs
Unacceptable Result
Acceptable Result
DSS Manager
NODE:
A4
TITLE:
Analyze Result
NUMBER:


USED AT:
AUTHOR: Kevin J Snoap
PROJECT: RD DSS
NOTES: 1 2 3 4 5 6 7 8 9 10
DATE: 5/17/98
REV: 7/25/98
WORKING
DRAFT
RECOMMENDED
PUBLICATION
READER
DATE
CONTEXT:
A0
MODS
Analyzed Result
Query Marine's School Fitness
1
Query School's Eligible Marines
2
Query School's Class Penalty
3
Query Results
DSS Manager
NODE:
A5
TITLE:
Query Data
NUMBER:


USED AT:
AUTHOR: Kevin J Snoap
PROJECT: RD DSS
NOTES: 1 2 3 4 5 6 7 8 9 10
DATE: 5/17/98
REV: 7/22/98
WORKING
DRAFT
RECOMMENDED
PUBLICATION
READER
DATE
CONTEXT:
A0
MODS
Analyzed Result
Generate Assigned Marine Report
1
Generate Unassigned Marine Report
2
Maintained Data
Generate Entry Level School Report
3
Reports
DSS Manager
NODE:
A6
TITLE:
Generate Report
NUMBER:

APPENDIX D. RDDSS VBA CODE

```
Form: frmAnalyzeResult
  Code
    Attribute VB_Name = "Form_frmAnalyzeResult"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit

    Dim booSchoolAssignment As Boolean


    Private Sub btnExit_Click()
    On Error GoTo Err_btnExit_Click


        DoCmd.Close

    Exit_btnExit_Click:
        Exit Sub

    Err_btnExit_Click:
        MsgBox Err.Description
        Resume Exit_btnExit_Click

    End Sub

    Private Sub btnSchoolAssignments_Click()
    On Error GoTo Err_btnSchoolAssignments_Click

        Dim stDocName As String
        Dim stLinkCriteria As String

        ' Set the flag
        booSchoolAssignment = True

        ' Close the current form
        DoCmd.Close
        ' Open specified form
        stDocName = "frmSchoolAssignments"
        DoCmd.OpenForm stDocName, , , stLinkCriteria

    Exit_btnSchoolAssignments_Click:
        Exit Sub

    Err_btnSchoolAssignments_Click:
        MsgBox Err.Description
        Resume Exit_btnSchoolAssignments_Click

    End Sub

    Private Sub btnSolverAssignments_Click()
    On Error GoTo Err_btnSolverAssignments_Click

        Dim stDocName As String
        Dim stLinkCriteria As String

        ' Close the current form
        DoCmd.Close
        ' Open specified form
        stDocName = "frmAssignmentResult"
        DoCmd.OpenForm stDocName, , , stLinkCriteria

    Exit_btnSolverAssignments_Click:
        Exit Sub

    Err_btnSolverAssignments_Click:
        MsgBox Err.Description
        Resume Exit_btnSolverAssignments_Click

    End Sub

    Private Sub btnUnassigedMarines_Click()
    On Error GoTo Err_btnUnassigedMarines_Click


        Dim strSQL As String
        Dim rec As Recordset
        Dim db1 As Database

        Set db1 = CurrentDb()

    ' If the number of unassigned marines = 0, then disable the
    unassigned marines button
        strSQL = "SELECT Count(PEF) AS TotalUnassigned FROM
        Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
        If rec!TotalUnassigned = 0 Then
            MsgBox ("                    All Marines were assigned.")
        Else


            Dim stDocName As String
            Dim stLinkCriteria As String

            ' Close the current form
            DoCmd.Close
            ' Open specified form
            stDocName = "frmUnassignedMarines"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

        End If


    Exit_btnUnassigedMarines_Click:
        Exit Sub

    Err_btnUnassigedMarines_Click:
        MsgBox Err.Description
        Resume Exit_btnUnassigedMarines_Click

    End Sub

    Private Sub Command8_Click()
    On Error GoTo Err_Command8_Click


        Dim stDocName As String
        Dim stLinkCriteria As String


        ' Close the current form
        DoCmd.Close
        ' Open specified form
        stDocName = "frmRDM_Main_Switchboard"
        DoCmd.OpenForm stDocName, , , stLinkCriteria


    Exit_Command8_Click:
        Exit Sub

    Err_Command8_Click:
        MsgBox Err.Description
        Resume Exit_Command8_Click

    End Sub


    Private Sub Form_Deactivate()


        If booSchoolAssignment Then


            Dim strSQL As String
            Dim I As Integer, j As Integer
            Dim rec As Recordset, rec1 As Recordset, rec2 As Recordset
            Dim db1 As Database


            Set db1 = CurrentDb()


            ' Create a table to get the fit and fill weights used during the
            Application.SetOption "Confirm Action Queries", False
            ' Delete the table if it already exists
            DeleteTable


            db1.Execute "CREATE TABLE PERCENTAGE (CourseNumber TEXT, AMOS
    TEXT, Quota INTEGER, Assigned INTEGER, Percentage INTEGER)."
            Application.SetOption "Confirm Action Queries", True


            strSQL = "SELECT * FROM PERCENTAGE;"
            Set rec = db1.OpenRecordset(strSQL, dbOpenDynaset)


            strSQL = "SELECT * FROM qryTotalQuotaForRun ORDER BY
            Set rec1 = db1.OpenRecordset(strSQL, dbOpenSnapshot)
            strSQL = "SELECT * FROM qryTotalQuotaFilledForRun ORDER BY
    SCourseNumber_FK;"
            Set rec2 = db1.OpenRecordset(strSQL, dbOpenSnapshot)
            ' Ensure there are values in the records.
            If rec1.EOF = False Then
                If rec2.EOF = False Then
                    rec1.MoveLast
                    rec1.MoveFirst
                    rec2.MoveLast
                    rec2.MoveFirst
                    ' Fill the PENALTY table with the quota values for the
                    For i = 1 To rec1.RecordCount
                        rec.AddNew
                        rec!CourseNumber = rec1!SCourseNumber_FK
                        rec!AMOS = rec1!AMOS_FK
                        rec!Quota = rec1!SumOFQuota
                        rec.Update
                        rec1.MoveNext
                    Next i
                    rec.MoveFirst
                    ' Update the PENALTY table with the percentage of quota
                    For I = 1 To rec.RecordCount
                        rec2.MoveFirst
                        For j = 1 To rec2.RecordCount
                            If rec!CourseNumber = rec2!SCourseNumber_FK Then
                                If rec!AMOS = rec2!AMOS_FK Then
                                    rec.Edit
                                    rec!Assigned = rec2!CountOfFiscalYear_PK
                                    rec!Percentage = Int((rec!Assigned /
    rec!Quota) * 100)
                                    rec.Update
                                    Exit For
                                End If
                            End If
                            rec2.MoveNext
                            ' If no match was found, then the percent fill is
                            If j = rec2.RecordCount Then
                                rec.Edit
                                rec!Assigned = 0
                                rec!Percentage = 0
                                rec.Update
                            End If
                        Next j
                        rec.MoveNext
                    Next I


                End If


                rec.Close
                rec1.Close
                rec2.Close
                db1.Close


                ' Reset the flag
                booSchoolAssignment = False
            Else
                ' Delete the PERCENTAGE table
                DeleteTable
            End If


    End Sub


Form: frmAssignmentResult
  Code
    Attribute VB_Name = "Form_frmAssignmentResult"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit


    Private Sub Form_Current()


        Dim strSQL As String
        Dim rec As Recordset
        Dim db1 As Database


        Set db1 = CurrentDb()


        ' Calculates the high, average, and low fitness scores. Also, it
        calculates the number of solver assignments
        strSQL = "SELECT Avg(Fitness) AS Average, Max(Fitness) As Maximum,
        Min(Fitness) As Minimum, Count(Fitness) As TotalAssigned FROM
        qryAssignmentResult;"
        Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
        Me.txtFitnessAvg = Int(rec!Average)
        Me.txtFitnessMax = rec!Maximum
        Me.txtFitnessMin = rec!Minimum
        Me.txtSolverAssignments = rec!TotalAssigned


        ' Calculates the number of manual assignments, and the total number
        of assignments.
        strSQL = "SELECT Count(AssignmentType) AS TotalManualAssigned FROM
        qryManuallyAssignedMarines;"
        Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
        Me.txtManualAssignments = rec!TotalManualAssigned
```

```
Me.txtSolverAssignments

    ' Calculates the number of unassigned marines, and the total number
of assignable marines
    strSQL = "SELECT Count(PEF) AS TotalUnassigned FROM
    Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
    Me.txtTotalUnassigned = rec!TotalUnassigned
    Me.txtTotalAssignable = rec!TotalUnassigned +

    ' Create a table to get the fit and fill weights used during the run
    Application.SetOption "Confirm Action Queries", False
    db1.Execute "CREATE TABLE CONSTANTS (ConstantName TEXT, intValue
    DoCmd.TransferText acImportFixed, "Rdm_Data Export Specification",
CONSTANTS, "C:\ToBeRdm\Ampl\Data\rdm.dat"
    Application.SetOption "Confirm Action Queries", True

    strSQL = "SELECT intValue FROM CONSTANTS;"
    Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
    Me.txtFitWeight = rec!intValue
    rec.MoveNext
    rec.MoveNext
    Me.txtFillWeight = rec!intValue
    rec.Close

    ' Remove the created table
    db1.Execute "DROP TABLE CONSTANTS;"
    db1.Close

End Sub
Private Sub Close_Click()
On Error GoTo Err_Close_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmAnalyzeResult"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Close_Click:
    Exit Sub

Err_Close_Click:
    MsgBox Err.Description
    Resume Exit_Close_Click

End Sub

Form: frmChangeGradDate
  Code
    Attribute VB_Name = "Form_frmChangeGradDate"
    Attribute VB_GlobalNameSpace = False
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit

    Private Sub btnChangeDate_Click()

    ' Change the specified graduation date in the MARINE table
    Application.SetOption "Confirm Action Queries", False
    DoCmd.OpenQuery "qryChangeGradDate"
    Application.SetOption "Confirm Action Queries", True

    ' Update the drop down list for MCRD Grad Date
    Me!cmbMCRDGradDate.RowSource = "SELECT DISTINCTROW
[qryMCTGradDate].[GradDate] FROM [qryMCTGradDate];"

    ' Force user to refresh data before performing another date change
    Me!cmbDays.Enabled = False
    Me!txtMCTGradDate.Enabled = False
    Me!btnEquals.Enabled = False

    ' Provide a message indicating the change was made
    MsgBox "Date change was successful!"

End Sub

Private Sub btnEquals_Click()

    Dim varDate As Variant
    Dim intDays As Integer

    intDays = Me.cmbDays
    varDate = Me.cmbMCRDGradDate

    If IsNull(varDate) = False And IsNull(intDays) = False Then

        ' Format this date for use in the DateAdd function
        varDate = Format(varDate, "#####/##/##")

        ' Add 120 days to this date
        varDate = DateAdd("d", intDays, varDate)

        ' Change calendar to this date
        Me!ctlCalendar.Value = varDate

        ' Convert the new date back into the original format
        varDate = Format(varDate, "yyyymmdd")

        ' Place the new date in the "upper date bound" text box on the
calling form
        Me.txtMCTGradDate = varDate

        ' Allows user to change the graduation date in the MARINE table
        Me!btnChangeDate.Enabled = True
    End If

End Sub

Private Sub cmbMCRDGradDate_AfterUpdate()

    Dim varDate As Variant

    varDate = Me.cmbMCRDGradDate
    Me!txtMCTGradDate.Value = " "

    If IsNull(varDate) = False Then

        ' Format this date for use in the DateAdd function
        varDate = Format(varDate, "#####/##/##")

        ' Change calendar to this date
        Me!ctlCalendar.Value = varDate
        Me!ctlCalendar.Visible = True
        Me!cmbDays.Enabled = True
        Me!txtMCTGradDate.Enabled = True
        Me!btnEquals.Enabled = True

    End If

End Sub

Private Sub Form_Current()

    Me!ctlCalendar.Visible = False
    Me!cmbDays.Enabled = False
    Me!txtMCTGradDate.Enabled = False
    Me!btnEquals.Enabled = False
    Me!btnChangeDate.Enabled = False

End Sub
Private Sub Close_Click()
On Error GoTo Err_Close_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmImport/ExportSwitchboard"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Close_Click:
    Exit Sub

Err_Close_Click:
    MsgBox Err.Description
    Resume Exit_Close_Click

End Sub

Form: frmClass
  Code
    Attribute VB_Name = "Form_frmClass"
    Attribute VB_GlobalNameSpace = False
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit

    Private Sub btnFindSchool_Click()
On Error GoTo Err_btnFindSchool_Click

    Screen.PreviousControl.SetFocus
    DoCmd.DoMenuItem acFormBar, acEditMenu, 10, , acMenuVer70

Exit_btnFindSchool_Click:
    Exit Sub

Err_btnFindSchool_Click:
    MsgBox Err.Description
    Resume Exit_btnFindSchool_Click

End Sub

Form: frmClassQuotaPenaltyAndFit
  Code
    Attribute VB_Name = "Form_frmClassQuotaPenaltyAndFit"
    Attribute VB_GlobalNameSpace = False
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit

    Private Sub btnGo_Click()

    Dim varUDateBound
    Dim lngHour As Long, lngMin As Long, lngSec As Long
    Dim lngStart As Long, lngEnd As Long
    Dim strSQL As String

    ' Starts the timer for displaying the time taken for this subroutine
    lngStart = Timer

    ' Prevents the user from going back to change the MCTGradDate until a
fitness file is
     ' made, or the reset button is pushed
    Me!txtMCTGradDate.Enabled = False
    varUDateBound = Me.UDateBound

    ' Generate the quota and penalty files
    Quota_Penalty (varUDateBound)

    ' Update the quota/penalty records on this form
    strSQL = "SELECT DISTINCTROW [CLASS].[SCourseNumber_FK], " & _
    "[CLASS].[AMOS_FK],[CLASS].[ClassNumber_PK], [CLASS].[ReportDate], " &
    "[CLASS].[Quota], [CLASS].[ClassIndex], [PENALTY].[ClassIndex_FK], " &
    "[PENALTY].[Penalty] FROM ([CLASS] INNER JOIN [PENALTY] ON " & _
    "[CLASS].[ClassIndex] =[PENALTY].[ClassIndex_FK]);"
    Me.RecordSource = strSQL

    ' update status of status text box
    Me!Status = "Working. . ."

    ' Call the Fitness procedure
    Fitness

    ' update status of status text box
    Me!Status = "Files generated!"
    DoCmd.Beep

    ' Records the stop time for running this subroutine
    lngEnd = Timer
    ' Determine total secs
    lngSec = lngEnd - lngStart
    ' Determine total hours
    lngHour = lngSec \ 3600
    ' Determine total mins
    lngMin = (lngSec - lngHour * 3600) \ 60
    ' Determine the secs remaining
    lngSec = (lngSec - (lngMin * 60) - (lngHour * 3600)) \ 1
    MsgBox "This operation took " & lngHour & " hour(s), " & lngMin & "
min(s), " & _
        "and " & lngSec & " secs.", vbOKOnly, "Recruit Distribution Model"

    Me.btnPrepareAndExecuteSolver.SetFocus

End Sub

Private Sub btnGo_MouseDown(Button As Integer, Shift As Integer, X As
Y As Single)
```

```
    Me!Status = "Working ..."

End Sub

Private Sub btnPrepareAndExecuteSolver_Click()
On Error GoTo Err_btnPrepareAndExecuteSolver_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmPrepareAndExecuteSolver"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_btnPrepareAndExecuteSolver_Click:
    Exit Sub

Err_btnPrepareAndExecuteSolver_Click:
    MsgBox Err.Description
    Resume Exit_btnPrepareAndExecuteSolver_Click

End Sub

Private Sub btnReturnPrevious_Click()
On Error GoTo Err_btnReturnPrevious_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmPreprocessing&ExecutionSwitchboard"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_btnReturnPrevious_Click:
    Exit Sub

Err_btnReturnPrevious_Click:
    MsgBox Err.Description
    Resume Exit_btnReturnPrevious_Click

End Sub

Private Sub cmbCourseNumberFind_AfterUpdate()

    Dim R As Recordset
    Set R = Me.RecordsetClone
    R.FindFirst "[SCourseNumber_FK] = " & Chr(34) &
Me![cmbCourseNumberFind] & Chr(34)
    Me.Bookmark = R.Bookmark
    Me![cmbCourseNumberFind] = Null
    Me.Penalty.SetFocus

End Sub

Private Sub Form_Current()

    ' Prevents the user from creating the AMPL files until a MCT
    ' graduation date is entered
    If IsNull(Me.MCTGradDate.Value) Then
        Me!btnGo.Enabled = False
        Me!Status.Enabled = False

    ' Allows the user to create the quota and penalty files
    Else
        Me!btnGo.Enabled = True

    End If
    ' update the status of the status text box
    Me!Status = " "

End Sub

Private Sub MCTGradDate_AfterUpdate()

    Dim varDate As Variant

    varDate = Me.MCTGradDate

    If IsNull(varDate) = False Then

        Me!btnGo.Enabled = True
        Me!Status.Enabled = True

        ' Format this date for use in the DateAdd function
        varDate = Format(varDate, "####/##/##")

        ' Add 120 days to this date
        varDate = DateAdd("d", 120, varDate)

        ' Convert the new date back into the original format
        varDate = Format(varDate, "yyyymmdd")

        ' Place the new date in the "upper date bound" text box on the
calling form.
        Me.UDateBound = varDate
    Else
        Me!btnGo.Enabled = False
        Me!Status.Enabled = False
    End If
End Sub


Form: frmFind
Code
    Attribute VB_Name = "Form_frmFind"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit

    Private Sub btnFind_Click()
    On Error GoTo Err_btnFind_Click

    'Screen.PreviousControl.SetFocus
    Forms!frmSchoolToPropertyMaint.SetFocus
    DoCmd.FindRecord Me.cmbCourseNumber, , True, , True, acAll
    'DoCmd.DoMenuItem acFormBar, acEditMenu, 10, , acMenuVer70

Exit_btnFind_Click:
    Exit Sub

Err_btnFind_Click:
    MsgBox Err.Description
    Resume Exit_btnFind_Click
End Sub


Form: frmFundamentalProperty
Code
    Attribute VB_Name = "Form_frmFundamentalProperty"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit

    Private Sub Command15_Click()

        MsgBox "This is a button", vbInformation, "Testing"

    End Sub

    Private Sub btnClose_Click()
    On Error GoTo Err_btnClose_Click

        DoCmd.Close
        DoCmd.OpenForm "frmMaintenanceSwitchboard"

    Exit_btnClose_Click:
        Exit Sub

    Err_btnClose_Click:
        MsgBox Err.Description
        Resume Exit_btnClose_Click

    End Sub


    Private Sub cmbFPropertyNameFind_AfterUpdate()

        Dim R As Recordset
        Set R = Me.RecordsetClone
        R.FindFirst "[FPropertyName_PK] = " & Chr(34) &
Me![cmbFPropertyNameFind] & Chr(34)
        Me.Bookmark = R.Bookmark
        Me![cmbFPropertyNameFind] = Null
        Me.FPropertyName_PK.SetFocus

    End Sub

    Private Sub Command11_Click()
        ' Forces user to enter data for property name and description
    If IsNull(Me.FPropertyName_PK.Value) Or IsNull(Me.Description.Value)
        Me!MarineField.Enabled = False
        Me!Operator.Enabled = False
        Me!Label10.Visible = False
        Me!subfrmFundamentalProperty.Visible = False
        Me!subfrmFundamentalPropertyList.Visible = False
        Me!cmbPotentialValue.Visible = False
        MsgBox "You must provide a 'Property Name' and 'Description'
before building the fundamental equation."
    Else
        ' Allows the user to enter values for the fundamental equation
        Me!MarineField.Enabled = True
        Me!Operator.Enabled = True
        Me!Label10.Visible = True
        If Forms!frmFundamentalProperty.Operator.Value = "in" Then
            Me!subfrmFundamentalProperty.Visible = False
            Me!subfrmFundamentalPropertyList.Visible = True

        Else
            Me!cmbPotentialValue.Visible = True
            Me!subfrmFundamentalProperty.Visible = True
            Me!subfrmFundamentalPropertyList.Visible = False
        End If
    End If

End Sub

    Private Sub Description_AfterUpdate()

        Dim strSQL As String

        ' Forces user to enter data for property name and description
    If IsNull(Me.FPropertyName_PK.Value) Or IsNull(Me.Description.Value)
        Me!MarineField.Enabled = False
        Me!Operator.Enabled = False
        Me!Label10.Visible = False
        Me!subfrmFundamentalProperty.Visible = False
        Me!subfrmFundamentalPropertyList.Visible = False

    ' Allows the user to enter values for the fundamental equation
    Else
        Me!MarineField.Enabled = True
        Me!Operator.Enabled = True
        Me!Label10.Visible = True
        If Forms!frmFundamentalProperty.Operator.Value = "in" Then
            strSQL = "SELECT DISTINCT " & Me!MarineField & " FROM
Forms!frmFundamentalProperty!subfrmFundamentalPropertyList!Value_FK.RowSo
urce = strSQL
            Me!subfrmFundamentalProperty.Visible = False
            Me!subfrmFundamentalPropertyList.Visible = True

        Else
            strSQL = "SELECT DISTINCT " & Me!MarineField & " FROM
Forms!frmFundamentalProperty!subfrmFundamentalProperty!cmbValue_FK.RowSou
rce = strSQL
            Me!subfrmFundamentalProperty.Visible = True
            Me!subfrmFundamentalPropertyList.Visible = False
        End If
    End If


End Sub


    Private Sub Form_BeforeUpdate(Cancel As Integer)

    [FundPropTimeStamp] = Now

End Sub

    Private Sub Form_Current()

        Dim strSQL As String

        'strSQL = "SELECT MarineField, Operator FROM FUNDAMENTAL_PROPERTY
WHERE FPropertyName_PK = " & FundPropName
```

```
    ' Forces user to enter data for property name and description
If IsNull(Me.FPropertyName_PK.Value) Or IsNull(Me.Description.Value)
    Me!MarineField.Enabled = False
    Me!Operator.Enabled = False
    Me!Label10.Visible = False
    Me!subfrmFundamentalProperty.Visible = False
    Me!subfrmFundamentalPropertyList.Visible = False

' Allows the user to enter values for the fundamental equation
Else
    Me!MarineField.Enabled = True
    Me!Operator.Enabled = True
    Me!Label10.Visible = True
    If Forms!frmFundamentalProperty.Operator.Value = "in" Then
        ' Update the Potential Value list
        Me!subfrmFundamentalProperty.Visible = False
        Me!subfrmFundamentalPropertyList.Visible = True
        strSQL = "SELECT DISTINCT " & Me!MarineField & " FROM
Forms!frmFundamentalProperty!subfrmFundamentalPropertyList!Value_FK.RowSo
urce = strSQL
    Else
        ' Update the Potential Value list
        strSQL = "SELECT DISTINCT " & Me!MarineField & " FROM
Forms!frmFundamentalProperty!subfrmFundamentalProperty!cmbValue_FK.RowSou
rce = strSQL
        Me!subfrmFundamentalProperty.Visible = True
        Me!subfrmFundamentalPropertyList.Visible = False
    End If

' Set focus to the property name. This prevents problem
associated with entering the "Operator" object.
    FPropertyName_PK.SetFocus
End If



End Sub

Private Sub FPropertyName_PK_AfterUpdate()

    Dim strSQL As String

    ' Forces user to enter data for property name and description
If IsNull(Me.FPropertyName_PK.Value) Or IsNull(Me.Description.Value)
    Me!MarineField.Enabled = False
    Me!Operator.Enabled = False
    Me!Label10.Visible = False
    Me!subfrmFundamentalProperty.Visible = False
    Me!subfrmFundamentalPropertyList.Visible = False

' Allows the user to enter values for the fundamental equation
Else
    Me!MarineField.Enabled = True
    Me!Operator.Enabled = True
    Me!Label10.Visible = True
    If Forms!frmFundamentalProperty.Operator.Value = "in" Then
        strSQL = "SELECT DISTINCT " & Me!MarineField & " FROM
Forms!frmFundamentalProperty!subfrmFundamentalPropertyList!Value_FK.RowSo
urce = strSQL
        Me!subfrmFundamentalProperty.Visible = False
        Me!subfrmFundamentalPropertyList.Visible = True

    Else
        strSQL = "SELECT DISTINCT " & Me!MarineField & " FROM
Forms!frmFundamentalProperty!subfrmFundamentalProperty!cmbValue_FK.RowSou
rce = strSQL
        Me!subfrmFundamentalProperty.Visible = True
        Me!subfrmFundamentalPropertyList.Visible = False
    End If
End If

End Sub

Private Sub MarineField_AfterUpdate()

    Dim strSQL As String

    ' Update the Potential Value list
    strSQL = "SELECT DISTINCT " & Me!MarineField & " FROM MARINE;"

Forms!frmFundamentalProperty!subfrmFundamentalPropertyList!Value_FK.RowSo
urce = strSQL
Forms!frmFundamentalProperty!subfrmFundamentalProperty!cmbValue_FK.RowSou
rce = strSQL

End Sub

Private Sub Operator_AfterUpdate()

If Forms!frmFundamentalProperty.Operator.Value = "in" Then
    Me!subfrmFundamentalProperty.Visible = False
    Me!subfrmFundamentalPropertyList.Visible = True
Else
    Me!subfrmFundamentalProperty.Visible = True
    Me!subfrmFundamentalPropertyList.Visible = False
End If

End Sub
Private Sub btnDelete_Click()
On Error GoTo Err_btnDelete_Click


    DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
    DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70

Exit_btnDelete_Click:
    Exit Sub

Err_btnDelete_Click:
    MsgBox Err.Description
    Resume Exit_btnDelete_Click

End Sub
Private Sub Command14_Click()
On Error GoTo Err_Command14_Click


    Dim stDialStr As String
    Dim PrevCtl As Control
    Const ERR_OBJNOTEXIST = 2467
    Const ERR_OBJNOTSET = 91

    Set PrevCtl = Screen.PreviousControl

If TypeOf PrevCtl Is TextBox Then
  stDialStr = IIf(VarType(PrevCtl) > V_NULL, PrevCtl, "")
ElseIf TypeOf PrevCtl Is ListBox Then
  stDialStr = IIf(VarType(PrevCtl) > V_NULL, PrevCtl, "")
ElseIf TypeOf PrevCtl Is ComboBox Then
  stDialStr = IIf(VarType(PrevCtl) > V_NULL, PrevCtl, "")
Else
  stDialStr = ""
End If


    Application.Run "utility.wlb_AutoDial", stDialStr


Exit_Command14_Click:
    Exit Sub

Err_Command14_Click:
    If (Err = ERR_OBJNOTEXIST) Or (Err = ERR_OBJNOTSET) Then
      Resume Next
    End If
    MsgBox Err.Description
    Resume Exit_Command14_Click

End Sub
Private Sub Operator_Enter()


    If Me.Operator.Value = "in" Then
        MsgBox "The 'in' operator is not changeable. It is removed by
deleting the property.", vbInformation, "Unauthorized Action"
        subfrmFundamentalPropertyList.SetFocus
    End If


End Sub
```

Form: frmGenerateReport

```
Code
    Attribute VB_Name = "Form_frmGenerateReport"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit


Private Sub btnAssignmentReport_Click()


    DoCmd.OpenReport "rptassignedMarines", acViewPreview


End Sub

Private Sub btnEntryLevelSchool_Click()

    DoCmd.OpenReport "rptEntryLevelSchool", acViewPreview


End Sub

Private Sub btnExit_Click()
On Error GoTo Err_btnExit_Click


    DoCmd.Close

Exit_btnExit_Click:
    Exit Sub

Err_btnExit_Click:
    MsgBox Err.Description
    Resume Exit_btnExit_Click


End Sub

Private Sub btnUnassignedMarineReport_Click()

    DoCmd.OpenReport "rptUnassignedMarines", acViewPreview


End Sub

Private Sub Command8_Click()
On Error GoTo Err_Command8_Click


    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmRDM_Main_Switchboard"
    DoCmd.OpenForm stDocName, , , stLinkCriteria


Exit_Command8_Click:
    Exit Sub

Err_Command8_Click:
    MsgBox Err.Description
    Resume Exit_Command8_Click


End Sub
```

Form: frmimport/ExportSwitchboard

```
Code
    Attribute VB_Name = "Form_frmimport/ExportSwitchboard"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit


    Private Sub btnExit_Click()
    On Error GoTo Err_btnExit_Click


        DoCmd.Close


    Exit_btnExit_Click:
        Exit Sub

    Err_btnExit_Click:
        MsgBox Err.Description
        Resume Exit_btnExit_Click


    End Sub

    Private Sub btnExportRD3_Click()


        Application.SetOption "Confirm Action Queries", False
        DoCmd.SetWarnings (False)
        ' Exports assignments to RD3.txt file
        ExportRD3
        ' Archives data from the Marine and assignment tables, having report
dates less than the current date
```

```
1041      31    ArchiveData
1042      32    Application.SetOption "Confirm Action Queries", True
1043      33    DoCmd.SetWarnings (True)
1044      34
1045      35  End Sub
1046      36
1047      37
1048      38  Private Sub Command2_Click()
1049      39
1050      40    Dim stDocName As String
1051      41    Dim stLinkCriteria As String
1052      42
1053      43    Application.SetOption "Confirm Action Queries", False
1054      44    DoCmd.SetWarnings (False)
1055      45    ' Imports the RD1 file
1056      46    ImportRD1
1057      47    Application.SetOption "Confirm Action Queries", True
1058      48    DoCmd.SetWarnings (True)
1059      49
1060      50    ' Close the current form
1061      51    DoCmd.Close
1062      52    ' Open specified form
1063      53    stDocName = "frmChangeGradDate"
1064      54    DoCmd.OpenForm stDocName, , , , stLinkCriteria
1065      55
1066      56  End Sub
1067      57
1068      58  Private Sub Command4_Click()
1069      59
1070      60    ' Imports BNA.txt file
1071      61    Application.SetOption "Confirm Action Queries", False
1072      62    DoCmd.SetWarnings (False)
1073      63    DoCmd.RunSQL "DELETE * FROM BNA_EXTRACT;"
1074      64    ImportBNA
1075      65    Application.SetOption "Confirm Action Queries", True
1076      66    DoCmd.SetWarnings (True)
1077      67
1078      68  End Sub
1079      69
1080      70  Private Sub Command8_Click()
1081      71
1082      72  On Error GoTo Err_Command8_Click
1083      73
1084      74    Dim stDocName As String
1085      75    Dim stLinkCriteria As String
1086      76
1087      77    ' Close the current form
1088      78    DoCmd.Close
1089      79    ' Open specified form
1090      80    stDocName = "frmRDM_Main_Switchboard"
1091      81    DoCmd.OpenForm stDocName, , , , stLinkCriteria
1092      82
1093      83  Exit_Command8_Click:
1094      84    Exit Sub
1095      85
1096      86  Err_Command8_Click:
1097      87    MsgBox Err.Description
1098      88    Resume Exit_Command8_Click
1099      89
1100      90  End Sub
1101
1102  Form: frmLogicalProperty
1103      Code
1104      1   Attribute VB_Name = "Form_frmLogicalProperty"
1105      2   Attribute VB_Creatable = True
1106      3   Attribute VB_PredeclaredId = True
1107      4   Attribute VB_Exposed = False
1108      5   Option Compare Database
1109      6   Option Explicit
1110      7
1111      8   Private Sub btnClose_Click()
1112      9   On Error GoTo Err_btnClose_Click
1113      10
1114      11
1115      12    DoCmd.Close
1116      13    DoCmd.OpenForm "frmMaintenanceSwitchboard"
1117      14
1118      15  Exit_btnClose_Click:
1119      16    Exit Sub
1120      17
1121      18  Err_btnClose_Click:
1122      19    MsgBox Err.Description
1123      20    Resume Exit_btnClose_Click
1124      21
1125      22  End Sub
1126      23
1127      24  Private Sub cmbFundProp_Click()
1128      25
1129      26    ' Adds the selected fundamental property to the logical equation
1130      27    Me.LogicalEquation.Value = Me.LogicalEquation.Value &
1131          Me.cmbFundProp.Value & " "
1132      28
1133      29  End Sub
1134      30  Private Sub cmbLogOper_Click()
1135      31
1136      32    ' Adds the selected logical operator to the logical equation
1137      33    Me.LogicalEquation.Value = Me.LogicalEquation.Value &
1138          Me.cmbLogOper.Value & " "
1139      34
1140      35  End Sub
1141      36
1142      37  Private Sub cmbLPropertyNameFind_AfterUpdate()
1143      38
1144      39    Dim R As Recordset
1145      40    Set R = Me.Recordset.Clone
1146      41    R.FindFirst "[LPropertyName_PK] = " & Chr(34) &
1147          Me![cmbLPropertyNameFind] & Chr(34)
1148      42    Me.Bookmark = R.Bookmark
1149      43    Me![cmbLPropertyNameFind] = Null
1150      44    Me.LPropertyName_PK.SetFocus
1151      45
1152      46  End Sub
1153      47
1154      48  Private Sub Command10_Click()
1155      49
1156      50    ' Removes the last entry in the logical equation
1157      51
1158      52    Dim strInName, strUndo  As String     ' input name
1159      53    Dim intSpacePos         As Integer    ' position of the space
1160      54    Dim i                   As Integer    ' loop index
1161      55    Dim booResult           As Boolean
1162      56    Dim lngConversion       As Long
1163      57    Dim varConv             As Variant
1164      58
1165      59
1166      60    ' get the logical expression
1167      61    strInName = Me.LogicalEquation.Value
1168      62
1169      63    'Check for "Null" value
1170      64    If strInName <> "Null" Then
1171      65
1172      66      ' declare the temporary string as an array
1173      67      ReDim strTemp(0) As String
1174      68
1175      69      ' Find the position of the first space
1176      70      intSpacePos = InStr(strInName, " ")
1177      71
1178      72      ' Loop until no more spaces are found  InStr returns 0 if the
1179          space is not found
1180      73      Do Until intSpacePos = 0
1181      74        ' redimension the array, adding another element
1182      75        ' UBound tells us how many elements there already are in the
1183      76        ReDim Preserve strTemp(UBound(strTemp) + 1)
1184      77
1185      78        ' set the new element to the characters from the beginning of
1186      79        ' string up to the first space.  Left$ returns a number of
1187          characters
1188      80        ' from the beginning of a string
1189      81        strTemp(UBound(strTemp)) = Trim$(Left$(strInName, intSpacePos
1190      82
1191      83        ' now we've copied these characters into the name, they can
1192      84        ' removed from the original string.  Right$ returns a number
1193      85        ' characters from the end of the string.  It is the rightmost
1194      86        ' characters, therefore we subtract the position of the space
1195      87        ' the length of the string.  This gives us the number of
1196          characters remaining
1197      88        strInName = LTrim$(Right$(strInName, Len(strInName) -
1198      89
1199      90        ' find the next space
1200      91        intSpacePos = InStr(strInName, " ") 'Or intSpacePos =
1201          InStr(strInName, "(") 'Or intSpacePos = InStr(strInName, ")")
1202      92
1203      93      Loop
1204      94
1205      95      ' Remove the last element of the array, unless there is only one
1206          element left
1207      96      If UBound(strTemp) > 1 Then
1208      97        ReDim Preserve strTemp(UBound(strTemp) - 1)
1209      98
1210      99        ' Loop through the elements of the array and place them back
1211          into the logical equation expression
1212      100       For i = 1 To (UBound(strTemp))
1213      101         strUndo = strUndo & strTemp(i) & " "
1214      102         Me.LogicalEquation.Value = strUndo
1215      103       Next i
1216      104     Else
1217      105       ' Set the logical equation equal to "Null"
1218      106       Me.LogicalEquation.Value = "( "
1219      107     End If
1220      108
1221      109     ' Set logical equation expression equal to new value
1222      110   End If
1223      111
1224      112 End Sub
1225      113
1226      114 Private Sub Command11_Click()
1227      115
1228      116   ' Forces user to enter data for property name and description
1229      117   If IsNull(Me.LPropertyName_PK.Value) Or IsNull(Me.Description.Value)
1230      118     Me!Command8.Enabled = False
1231      119     Me!Command9.Enabled = False
1232      120     Me!Command10.Enabled = False
1233      121     Me!cmbFundProp.Enabled = False
1234      122     Me!cmbLogOper.Enabled = False
1235      123     Me!LogicalEquation.Enabled = False
1236      124     MsgBox "You must provide a 'Property Name' and 'Description'
1237          before building the logical equation."
1238      125
1239      126   ' Enters a "( " be the first entry in the logical equation if it is
1240      127   ElseIf IsNull(Me!LogicalEquation.Value) Then
1241      128     Me!Command8.Enabled = True
1242      129     Me!Command9.Enabled = True
1243      130     Me!Command10.Enabled = True
1244      131     Me!cmbFundProp.Enabled = True
1245      132     Me!cmbLogOper.Enabled = True
1246      133     Me!LogicalEquation.Enabled = True
1247      134     Me!LogicalEquation.Value = "( "
1248      135
1249      136   ' Allows the user to enter values into the logical equation
1250      137   Else
1251      138     Me!Command8.Enabled = True
1252      139     Me!Command9.Enabled = True
1253      140     Me!Command10.Enabled = True
1254      141     Me!cmbFundProp.Enabled = True
1255      142     Me!cmbLogOper.Enabled = True
1256      143     Me!LogicalEquation.Enabled = True
1257      144   End If
1258      145
1259      146 End Sub
1260      147
1261      148 Private Sub Command9_Click()
1262      149
1263      150   ' Adds the left bracket to the logical equation
1264      151   Me.LogicalEquation.Value = Me.LogicalEquation.Value & "( "
1265      152
1266      153 End Sub
1267      154 Private Sub Command9_Click()
1268      155
1269      156   ' Adds the right bracket to the logical equation
1270      157   Me.LogicalEquation.Value = Me.LogicalEquation.Value & ") "
1271      158
1272      159 End Sub
1273      160 Private Sub btnDelete_Click()
1274      161 On Error GoTo Err_btnDelete_Click
1275      162
1276      163
1277      164   DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
1278      165   DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70
1279      166
1280      167 Exit_btnDelete_Click:
1281      168   Exit Sub
1282      169
1283      170 Err_btnDelete_Click:
1284      171   MsgBox Err.Description
1285      172   Resume Exit_btnDelete_Click
1286      173
1287      174 End Sub
1288      175 Private Sub Description_AfterUpdate()
1289      176
1290      177   ' Forces user to enter data for property name and description
1291      178   If IsNull(Me.LPropertyName_PK.Value) Or IsNull(Me.Description.Value)
1292      179     Me!Command9.Enabled = False
1293      180     Me!Command9.Enabled = False
1294      181     Me!Command10.Enabled = False
1295      182     Me!cmbFundProp.Enabled = False
1296      183     Me!cmbLogOper.Enabled = False
1297      184     Me!LogicalEquation.Enabled = False
1298      185
1299      186   ' Enters a "( " be the first entry in the logical equation if it is
1300      187   ElseIf IsNull(Me!LogicalEquation.Value) Then
```

```
        Me!Command8.Enabled = True
        Me!Command9.Enabled = True
        Me!Command10.Enabled = True
        Me!cmbFundProp.Enabled = True
        Me!cmbLogOper.Enabled = True
        Me!LogicalEquation.Enabled = True
        Me!LogicalEquation.Value = "( "

    ' Allows the user to enter values into the logical equation
    Else
        Me!Command8.Enabled = True
        Me!Command9.Enabled = True
        Me!Command10.Enabled = True
        Me!cmbFundProp.Enabled = True
        Me!cmbLogOper.Enabled = True
        Me!LogicalEquation.Enabled = True
    End If

End Sub
Private Sub Form_BeforeUpdate(Cancel As Integer)

    [LogPropTimeStamp] = Now

End Sub
Private Sub Form_Current()

    ' Forces user to enter data for property name and description
    If IsNull(Me.LPropertyName_PK.Value) Or IsNull(Me.Description.Value)
        Me!Command9.Enabled = False
        Me!Command9.Enabled = False
        Me!Command10.Enabled = False
        Me!cmbFundProp.Enabled = False
        Me!cmbLogOper.Enabled = False
        Me!LogicalEquation.Enabled = False

    ' Enters a "( " be the first entry in the logical equation if it is
    ElseIf IsNull(Me!LogicalEquation.Value) Then
        Me!LogicalEquation.Value = "( "

    ' Allows the user to enter values into the logical equation
    Else
        Me!Command8.Enabled = True
        Me!Command9.Enabled = True
        Me!Command10.Enabled = True
        Me!cmbFundProp.Enabled = True
        Me!cmbLogOper.Enabled = True
        Me!LogicalEquation.Enabled = True
    End If

End Sub
Private Sub LogicalEquation_Enter()

    ' Prevents the user from modifing the logical equation directly
    MsgBox "The logical equation is only modifiable by the above logical
equation builder"
    DoCmd.GoToControl "LPropertyName_PK"

End Sub
Private Sub LPropertyName_PK_AfterUpdate()

    ' Forces user to enter data for property name and description
    If IsNull(Me.LPropertyName_PK.Value) Or IsNull(Me.Description.Value)
        Me!Command8.Enabled = False
        Me!Command9.Enabled = False
        Me!Command10.Enabled = False
        Me!cmbFundProp.Enabled = False
        Me!cmbLogOper.Enabled = False
        Me!LogicalEquation.Enabled = False

    ' Enters a "( " be the first entry in the logical equation if it is
    ElseIf IsNull(Me!LogicalEquation.Value) Then
        Me!Command8.Enabled = True
        Me!Command9.Enabled = True
        Me!Command10.Enabled = True
        Me!cmbFundProp.Enabled = True
        Me!cmbLogOper.Enabled = True
        Me!LogicalEquation.Enabled = True
        Me!LogicalEquation.Value = "( "

    ' Allows the user to enter values into the logical equation
    Else
        Me!Command8.Enabled = True
        Me!Command9.Enabled = True
        Me!Command10.Enabled = True
        Me!cmbFundProp.Enabled = True
        Me!cmbLogOper.Enabled = True
        Me!LogicalEquation.Enabled = True
    End If

End Sub

Form: frmMaintenanceSwitchboard
    Code
    Attribute VB_Name = "Form_frmMaintenanceSwitchboard"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit

    Private Sub btnExit_Click()
    On Error GoTo Err_btnExit_Click

        DoCmd.Close

    Exit_btnExit_Click:
        Exit Sub

    Err_btnExit_Click:
        MsgBox Err.Description
        Resume Exit_btnExit_Click

    End Sub

    Private Sub Command0_Click()
    On Error GoTo Err_Command0_Click

        Dim stDocName As String
        Dim stLinkCriteria As String

        ' Close the current form
        DoCmd.Close
        ' Open specified form
        stDocName = "frmPEF_Maint"
        DoCmd.OpenForm stDocName, , , stLinkCriteria

    Exit_Command0_Click:
        Exit Sub

    Err_Command0_Click:
        MsgBox Err.Description
        Resume Exit_Command0_Click

    End Sub

    Private Sub Command12_Click()
    On Error GoTo Err_Command12_Click

        Dim stDocName As String
        Dim stLinkCriteria As String

        ' Close the current form
        DoCmd.Close
        ' Open specified form
        stDocName = "frmSchools"
        DoCmd.OpenForm stDocName, , , stLinkCriteria

    Exit_Command12_Click:
        Exit Sub

    Err_Command12_Click:
        MsgBox Err.Description
        Resume Exit_Command12_Click

    End Sub

    Private Sub Command14_Click()
    On Error GoTo Err_Command14_Click

        Dim stDocName As String
        Dim stLinkCriteria As String

        ' Close the current form
        DoCmd.Close
        ' Open specified form
        stDocName = "frmPEF"
        DoCmd.OpenForm stDocName, , , stLinkCriteria

    Exit_Command14_Click:
        Exit Sub

    Err_Command14_Click:
        MsgBox Err.Description
        Resume Exit_Command14_Click

    End Sub

    Private Sub Command2_Click()
    On Error GoTo Err_Command2_Click

        Dim stDocName As String
        Dim stLinkCriteria As String

        ' Close the current form
        DoCmd.Close
        ' Open specified form
        stDocName = "frmFundamentalProperty"
        DoCmd.OpenForm stDocName, , , stLinkCriteria

    Exit_Command2_Click:
        Exit Sub

    Err_Command2_Click:
        MsgBox Err.Description
        Resume Exit_Command2_Click

    End Sub

    Private Sub Command4_Click()
    On Error GoTo Err_Command4_Click

        Dim stDocName As String
        Dim stLinkCriteria As String

        ' Close the current form
        DoCmd.Close
        ' Open specified form
        stDocName = "frmLogicalProperty"
        DoCmd.OpenForm stDocName, , , stLinkCriteria

    Exit_Command4_Click:
        Exit Sub

    Err_Command4_Click:
        MsgBox Err.Description
        Resume Exit_Command4_Click

    End Sub

    Private Sub Command6_Click()
    On Error GoTo Err_Command6_Click

        Dim stDocName As String
        Dim stLinkCriteria As String

        ' Close the current form
        DoCmd.Close
        ' Open specified form
        stDocName = "frmSchoolToPropertyMaint"
        DoCmd.OpenForm stDocName, , , stLinkCriteria

    Exit_Command6_Click:
        Exit Sub

    Err_Command6_Click:
        MsgBox Err.Description
        Resume Exit_Command6_Click

    End Sub

    Private Sub Command8_Click()
    On Error GoTo Err_Command8_Click

        Dim stDocName As String
        Dim stLinkCriteria As String

        ' Close the current form
        DoCmd.Close
        ' Open specified form
        stDocName = "frmRDM_Main_Switchboard"
        DoCmd.OpenForm stDocName, , , stLinkCriteria

    Exit_Command8_Click:
        Exit Sub
```

```
    165 Err_Command8_Click:
    166     MsgBox Err.Description
    167     Resume Exit_Command8_Click
    168
    169 End Sub
Form: frmPEF
Code
    1   Attribute VB_Name = "Form_frmPEF"
    2   Attribute VB_Creatable = True
    3   Attribute VB_PredeclaredId = True
    4   Attribute VB_Exposed = False
    5   Option Compare Database
    6   Option Explicit
    7
    8   Private Sub cmbPefFind_AfterUpdate()
    9
    10      Dim R As Recordset
    11      Set R = Me.RecordsetClone
    12      R.FindFirst "[PEF_PK] = " & Chr(34) & Me![cmbPefFind] & Chr(34)
    13      Me.Bookmark = R.Bookmark
    14      Me![cmbPefFind] = Null
    15      Me.PEF_PK.SetFocus
    16
    17  End Sub
    18
    19  Private Sub Form_BeforeUpdate(Cancel As Integer)
    20
    21      [PEF_TimeStamp] = Now
    22
    23  End Sub
    24
    25  Private Sub Form_Current()
    26
    27      Dim strSQL As String
    28
    29      ' Update the PEF List
    30      strSQL = "SELECT DISTINCTROW [MARINE].[PEF]FROM MARINE LEFT JOIN PEF
    ON [MARINE].[PEF] = [PEF].[PEF_PK]WHERE ([PEF].[PEF_PK] Is Null)ORDER BY
    31      Me.PEF_PK.RowSource = strSQL
    32
    33  End Sub
    34
    35  Private Sub PEF_PK_AfterUpdate()
    36
    37      Dim strSQL As String
    38
    39      ' Update the PEF List
    40      strSQL = "SELECT DISTINCTROW [MARINE].[PEF]FROM MARINE LEFT JOIN PEF
    ON [MARINE].[PEF] = [PEF].[PEF_PK]WHERE ([PEF].[PEF_PK] Is Null)ORDER BY
    41      Me.PEF_PK.RowSource = strSQL
    42
    43  End Sub
    44  Private Sub btnDelete_Click()
    45  On Error GoTo Err_btnDelete_Click
    46
    47
    48      DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
    49      DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70
    50
    51  Exit_btnDelete_Click:
    52      Exit Sub
    53
    54  Err_btnDelete_Click:
    55      MsgBox Err.Description
    56      Resume Exit_btnDelete_Click
    57
    58  End Sub
    59  Private Sub btnClose_Click()
    60  On Error GoTo Err_btnClose_Click
    61
    62
    63      DoCmd.Close
    64      DoCmd.OpenForm "frmMaintenanceSwitchboard"
    65
    66  Exit_btnClose_Click:
    67      Exit Sub
    68
    69  Err_btnClose_Click:
    70      MsgBox Err.Description
    71      Resume Exit_btnClose_Click
    72
    73  End Sub
Form: frmPrepareAndExecuteSolver
Code
    1   Attribute VB_Name = "Form_frmPrepareAndExecuteSolver"
    2   Attribute VB_Creatable = True
    3   Attribute VB_PredeclaredId = True
    4   Attribute VB_Exposed = False
    5   Option Compare Database
    6   Option Explicit
    7
    8   Private Sub btnAMPL_Click()
    9   On Error GoTo Err_btnAMPL_Click
    10
    11      AmplData
    12
    13      Dim stAppName As String
    14
    15      'stAppName = "C:\ToBeRdm\Amplwin\amplwin.exe"
    16      stAppName = "C:\ToBeRdm\Amplwin\amp.bat"
    17      Call Shell(stAppName, 0)
    18
    19      'MsgBox "Enter into the command line 'include rdm.run'"
    20
    21  Exit_btnAMPL_Click:
    22      Exit Sub
    23
    24  Err_btnAMPL_Click:
    25      MsgBox Err.Description
    26      Resume Exit_btnAMPL_Click
    27
    28  End Sub
    29
    30  Private Sub btnAmplPlus_Click()
    31  On Error GoTo Err_btnAmplPlus_Click
    32
    33      AmplData
    34
    35      Dim stAppName As String
    36
    37      stAppName = "C:\AMPLPLUS\AMPLPLUS.EXE rdm.amp"
    38      Call Shell(stAppName, 1)
    39
    40  Exit_btnAmplPlus_Click:
    41      Exit Sub
    42
    43  Err_btnAmplPlus_Click:
    44      MsgBox Err.Description
    45      Resume Exit_btnAmplPlus_Click
    46
    47  End Sub
    48
    49
    50  Private Sub btnReturnPrevious_Click()
    51  On Error GoTo Err_btnReturnPrevious_Click
    52
    53
    54      Dim stDocName As String
    55      Dim stLinkCriteria As String
    56
    57      ' Close the current form
    58      DoCmd.Close
    59      ' Open specified form
    60      stDocName = "frmPreprocessing&ExecutionSwitchboard"
    61      DoCmd.OpenForm stDocName, , , stLinkCriteria
    62
    63  Exit_btnReturnPrevious_Click:
    64      Exit Sub
    65
    66  Err_btnReturnPrevious_Click:
    67      MsgBox Err.Description
    68      Resume Exit_btnReturnPrevious_Click
    69
    70
    71  End Sub
    72
    73  Private Sub Command4_Click()
    74      Application.SetOption "Confirm Action Queries", False
    75      DoCmd.SetWarnings (False)
    76      DoCmd.RunSQL "DELETE * FROM AMPL_RESULT;"
    77      Ampl_Result
    78      Application.SetOption "Confirm Action Queries", True
    79      DoCmd.SetWarnings (True)
    80
    81  End Sub
    82
    83  Private Sub Command7_Click()
    84  On Error GoTo Err_Command7_Click
    85
    86      Dim stDocName As String
    87      Dim stLinkCriteria As String
    88
    89      ' Close the current form
    90      DoCmd.Close
    91      ' Open specified form
    92      stDocName = "frmAnalyzeResult"
    93      DoCmd.OpenForm stDocName, , , stLinkCriteria
    94
    95  Exit_Command7_Click:
    96      Exit Sub
    97
    98  Err_Command7_Click:
    99      MsgBox Err.Description
    100     Resume Exit_Command7_Click
    101
    102 End Sub
    103
Form: frmPreprocessing&ExecutionSwitchboard
Code
    1   Attribute VB_Name = "Form_frmPreprocessing&ExecutionSwitchboard"
    2   Attribute VB_Creatable = True
    3   Attribute VB_PredeclaredId = True
    4   Attribute VB_Exposed = False
    5   Option Compare Database
    6   Option Explicit
    7
    8   Private Sub btnExit_Click()
    9   On Error GoTo Err_btnExit_Click
    10
    11
    12      DoCmd.Close
    13
    14  Exit_btnExit_Click:
    15      Exit Sub
    16
    17  Err_btnExit_Click:
    18      MsgBox Err.Description
    19      Resume Exit_btnExit_Click
    20
    21
    22  End Sub
    23
    24  Private Sub btnReclassification_Click()
    25  On Error GoTo Err_btnReclassification_Click
    26
    27      Dim stDocName As String
    28      Dim stLinkCriteria As String
    29
    30      ' Close the current form
    31      DoCmd.Close
    32      ' Open specified form
    33      stDocName = "frmReclassification"
    34      DoCmd.OpenForm stDocName, , , stLinkCriteria
    35
    36  Exit_btnReclassification_Click:
    37      Exit Sub
    38
    39  Err_btnReclassification_Click:
    40      MsgBox Err.Description
    41      Resume Exit_btnReclassification_Click
    42
    43
    44  End Sub
    45
    46  Private Sub btnScrubMarineData_Click()
    47  On Error GoTo Err_btnScrubMarineData_Click
    48
    49      Dim stDocName As String
    50      Dim stLinkCriteria As String
    51
    52      ' Close the current form
    53      DoCmd.Close
    54      ' Open specified form
    55      stDocName = "frmScrubMarine"
    56      DoCmd.OpenForm stDocName, , , stLinkCriteria
    57
    58  Exit_btnScrubMarineData_Click:
    59      Exit Sub
    60
    61  Err_btnScrubMarineData_Click:
    62      MsgBox Err.Description
    63      Resume Exit_btnScrubMarineData_Click
    64
    65  End Sub
    66
    67  Private Sub btnSpecialAssignment_Click()
    68  On Error GoTo Err_btnSpecialAssignment_Click
    69
```

```
    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmSpecialAssignment"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_btnSpecialAssignment_Click:
    Exit Sub

Err_btnSpecialAssignment_Click:
    MsgBox Err.Description
    Resume Exit_btnSpecialAssignment_Click



End Sub

Private Sub Command2_Click()
On Error GoTo Err_Command2_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmclassQuotaPenaltyAndFit"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Command2_Click:
    Exit Sub

Err_Command2_Click:
    MsgBox Err.Description
    Resume Exit_Command2_Click

End Sub
Private Sub Command4_Click()

    Application.SetOption "Confirm Action Queries", False
    DoCmd.SetWarnings (False)
    DoCmd.RunSQL "DELETE * FROM AMPL_RESULT;"
    Ampl_Result
    Application.SetOption "Confirm Action Queries", True
    DoCmd.SetWarnings (True)



End Sub
Private Sub Command6_Click()
On Error GoTo Err_Command6_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmPrepareAndExecuteSolver"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Command6_Click:
    Exit Sub

Err_Command6_Click:
    MsgBox Err.Description
    Resume Exit_Command6_Click

End Sub
Private Sub Command8_Click()
On Error GoTo Err_Command8_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmRDM_Main_Switchboard"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Command8_Click:
    Exit Sub

Err_Command8_Click:
    MsgBox Err.Description
    Resume Exit_Command8_Click

End Sub
Form: frmRDM_Main_Switchboard
  Code
    Attribute VB_Name = "Form_frmRDM_Main_Switchboard"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit
    Private Sub Command0_Click()

    On Error GoTo Err_Command0_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmImportExportSwitchboard"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Command0_Click:
    Exit Sub

Err_Command0_Click:
    MsgBox Err.Description
    Resume Exit_Command0_Click

End Sub
Private Sub Command2_Click()
On Error GoTo Err_Command2_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmMaintenanceSwitchboard"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Command2_Click:
    Exit Sub

Err_Command2_Click:
    MsgBox Err.Description
    Resume Exit_Command2_Click

End Sub
Private Sub Command4_Click()
On Error GoTo Err_Command4_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmPreprocessing&ExecutionSwitchboard"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Command4_Click:
    Exit Sub

Err_Command4_Click:
    MsgBox Err.Description
    Resume Exit_Command4_Click

End Sub
Private Sub Command6_Click()
On Error GoTo Err_Command6_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmAnalyzeResult"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Command6_Click:
    Exit Sub

Err_Command6_Click:
    MsgBox Err.Description
    Resume Exit_Command6_Click

End Sub
Private Sub Command8_Click()
On Error GoTo Err_Command8_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close the current form
    DoCmd.Close
    ' Open specified form
    stDocName = "frmGenerateReport"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Command8_Click:
    Exit Sub

Err_Command8_Click:
    MsgBox Err.Description
    Resume Exit_Command8_Click

End Sub
Private Sub btnExit_Click()
On Error GoTo Err_btnExit_Click


    DoCmd.Close

Exit_btnExit_Click:
    Exit Sub

Err_btnExit_Click:
    MsgBox Err.Description
    Resume Exit_btnExit_Click

End Sub
Form: frmReclassification
  Code
    Attribute VB_Name = "Form_frmReclassification"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit

    Private Sub cmbClassNumber_AfterUpdate()


    Dim strConvert As String


    Me.txtReportDate = Me.cmbClassNumber.Column(2)
    Me.txtMCC = Me.cmbClassNumber.Column(4)

    ' Convert the fiscal year to a two digit number for RD3 File
    strConvert = CStr(Me.cmbClassNumber.Column(3))
    strConvert = Right(strConvert, 2)
    Me.txtFY = CInt(strConvert)


    Me.txtAssignmentType = "R"

End Sub

Private Sub cmbClassNumber_Enter()


    Dim strSQL As String

    ' This query finds the class numbers, report dates and class
convening dates associated with the chosen school
    strSQL = "SELECT BNA_EXTRACT.ClassNumber_PK,
BNA_EXTRACT.ClassConvDate, BNA_EXTRACT.ReportDate,
BNA_EXTRACT.FiscalYear_PK, BNA_EXTRACT.MCC FROM BNA_EXTRACT INNER JOIN
SCH_TGT_MOS ON (BNA_EXTRACT.CourseNumber_PK =
SCH_TGT_MOS.TCourseNumber_FK) AND (BNA_EXTRACT.TargetMOS_PK =
SCH_TGT_MOS.TargetMOS_FK) WHERE BNA_EXTRACT.CourseNumber_PK =
Forms!frmReclassification!cmbCourseNumber AND SCH_TGT_MOS.AMOS_PK =
Forms!frmReclassification!txtAMOS;"
    Me.cmbClassNumber.RowSource = strSQL


End Sub
```

```
2081
2082  Private Sub cmbCourseNumber_AfterUpdate()
2083
2084      Me.txtAMOS = Me!cmbCourseNumber.Column(1)
2085
2086  End Sub
2087
2088  Private Sub cmbSSN_AfterUpdate()
2089
2090      Me.txtSO = Me!cmbSSN.Column(1)
2091      Me.txtGradDate = Me!cmbSSN.Column(2)
2092
2093  End Sub
2094
2095  Private Sub cmbSSN_Enter()
2096
2097      Dim strSQL As String
2098
2099      strSQL = "SELECT DISTINCTROW MARINE.SSN_PK, MARINE.SO#,
2100  MARINE.GradDate FROM MARINE LEFT JOIN ASSIGNMENT ON MARINE.SSN_PK =
2101  ASSIGNMENT.SSN_FK WHERE (((ASSIGNMENT.SSN_FK) Is Null));"
2102      Me.cmbSSN.RowSource = strSQL
2103
2104  End Sub
2105
2106  Private Sub cmbSSNFind_AfterUpdate()
2107
2108      Dim R As Recordset
2109      Set R = Me.RecordsetClone
2110      R.FindFirst "[SSN_FK] = " & Chr(34) & Me![cmbSSNFind] & Chr(34)
2111      Me.Bookmark = R.Bookmark
2112      Me![cmbSSNFind] = Null
2113      Me.cmbSSN.SetFocus
2114
2115  End Sub
2116
2117  Private Sub Delete_Click()
2118  On Error GoTo Err_Delete_Click
2119
2120
2121      DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
2122      DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70
2123
2124  Exit_Delete_Click:
2125      Exit Sub
2126
2127  Err_Delete_Click:
2128      MsgBox Err.Description
2129      Resume Exit_Delete_Click
2130
2131  End Sub
2132
2133  Private Sub Close_Click()
2134  On Error GoTo Err_Close_Click
2135
2136      Dim stDocName As String
2137      Dim stLinkCriteria As String
2138
2139      ' Close current form
2140      DoCmd.Close
2141
2142      ' Open specified form
2143      stDocName = "frmPreprocessing&ExecutionSwitchboard"
2144      DoCmd.OpenForm stDocName, , , stLinkCriteria
2145
2146  Exit_Close_Click:
2147      Exit Sub
2148
2149  Err_Close_Click:
2150      MsgBox Err.Description
2151      Resume Exit_Close_Click
2152
2153  End Sub
2154
2155
2156  Form: frmSchoolAssignments
2157      Code
2158      Attribute VB_Name = "Form_frmSchoolAssignments"
2159      Attribute VB_Creatable = True
2160      Attribute VB_PredeclaredId = True
2161      Attribute VB_Exposed = False
2162      Option Compare Database
2163      Option Explicit
2164      Private Sub Close_Click()
2165  On Error GoTo Err_Close_Click
2166
2167      Dim stDocName As String
2168      Dim stLinkCriteria As String
2169      Dim db1 As Database
2170
2171      Set db1 = CurrentDb()
2172
2173      ' Close the current form
2174      DoCmd.Close
2175      ' Open specified form
2176      stDocName = "frmAnalyzeResult"
2177      DoCmd.OpenForm stDocName, , , stLinkCriteria
2178      Forms!frmAnalyzeResult.SetFocus
2179
2180
2181  Exit_Close_Click:
2182      Exit Sub
2183
2184  Err_Close_Click:
2185      MsgBox Err.Description
2186      Resume Exit_Close_Click
2187
2188  End Sub
2189
2190  Private Sub Form_Current()
2191
2192      Dim strSQL As String
2193      Dim rec As Recordset
2194      Dim db1 As Database
2195
2196      Set db1 = CurrentDb()
2197
2198      ' Calculates the total quota, and number of schools for the run
2199      strSQL = "SELECT Sum(SumOfQuota) AS TotalQuota, Count(SumOfQuota) AS
2200  NumberOfSchools FROM qryTotalQuotaForRun;"
2201      Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
2202      Me.txtTotalQuota = rec!TotalQuota
2203      Me.txtNumberOfSchools = rec!NumberOfSchools
2204
2205      ' Calculates the total number of assignements for the run
2206      strSQL = "SELECT Sum(CountOfFiscalYear_PK) AS TotalAssigned FROM
2207  qryTotalQuotaFilledForRun;"
2208      Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
2209      Me.txtTotalAssigned = rec!TotalAssigned
2210
2211      Me.txtTotalPercentFill = Int((Me.txtTotalAssigned / Me.txtTotalQuota)
2212
2213
2214  End Sub
2215
2216  Form: frmSchools
2217      Code
2218      Attribute VB_Name = "Form_frmSchools"
2219      Attribute VB_Creatable = True
2220      Attribute VB_PredeclaredId = True
2221      Attribute VB_Exposed = False
2222      Option Compare Database
2223      Option Explicit
2224
2225      Private Sub AMOS_PK_AfterUpdate()
2226      Dim rec As Recordset
2227      Dim db1 As Database
2228      Dim strSQL As String
2229
2230      ' Update the drop down list for AMOS
2231      strSQL = "SELECT TargetMOS_PK FROM
2232  qryListUnusedTargetMOSFromTARGET_MOS WHERE TCourseNumber_PK = " &
2233      Me.AMOS_PK.RowSource = strSQL
2234      Me.txtTargetMOS_FK.RowSource = strSQL
2235
2236      ' Update the AMOS_FK in the child relation SCH_TGT_MOS
2237      'Forms!frmSchools!subfrmSchools!AMOS_FK.Value = Me.AMOS_PK.Value
2238
2239      ' Update the TargetMOS_FK in the child relation SCH_TGT_MOS
2240      Set db1 = CurrentDb()
2241      Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
2242      'Forms!frmSchools!subfrmSchools!TargetMOS_FK.Value = rec!TargetMOS_PK
2243
2244      ' Input the correct MCC value for the selected course
2245      strSQL = "SELECT MCC FROM TARGET_MOS WHERE TCourseNumber_PK = " &
2246  Me.SCourseNumber_PK.Value & ""
2247      Set db1 = CurrentDb()
2248      Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
2249      Me.MCC.Value = rec!MCC
2250
2251      ' Update the TCourseNumber_FK in the child relation SCH_TGT_MOS
2252      'Forms!frmSchools!subfrmSchools!TCourseNumber_FK.Value =
2253  Me.SCourseNumber_PK.Value
2254
2255  End Sub
2256
2257
2258  Private Sub btnClear_Click()
2259
2260      Dim db1 As Database
2261      Dim strSQL As String
2262      Dim r As Integer
2263      Dim rec As Recordset
2264
2265      Set db1 = CurrentDb()
2266
2267      strSQL = "SELECT DISTINCTROW TARGET_MOS.TCourseNumber_PK FROM
2268  TARGET_MOS LEFT JOIN SCH_TGT_MOS ON TARGET_MOS.TargetMOS_PK =
2269  SCH_TGT_MOS.TargetMOS_FK AND TARGET_MOS.TCourseNumber_PK =
2270  SCH_TGT_MOS.TCourseNumber_FK WHERE (((SCH_TGT_MOS.TargetMOS_FK) Is
2271  Null)AND((SCH_TGT_MOS.TCourseNumber_FK) Is Null))ORDER BY
2272  TCourseNumber_PK;"
2273      Set rec = db1.OpenRecordset(strSQL, dbOpenDynaset)
2274
2275      If rec.EOF = False Then
2276          rec.MoveLast
2277          rec.MoveFirst
2278      End If
2279
2280      ' Clear unused course numbers from the target_mos table

2281      If rec.RecordCount > 0 Then
2282          For r = 1 To rec.RecordCount
2283              ' Disables the action query confirmation message
2284              Application.SetOption "Confirm Action Queries", False
2285              DoCmd.SetWarnings (False)
2286
2287              strSQL = "DELETE * FROM TARGET_MOS WHERE
2288  TARGET_MOS.TCourseNumber_PK = " & rec!TCourseNumber_PK & ""
2289              db1.Execute strSQL
2290
2291              ' Enables the action query confirmation message
2292              Application.SetOption "Confirm Action Queries", True
2293              DoCmd.SetWarnings (True)
2294              rec.MoveNext
2295          Next r
2296      End If
2297
2298      ' Update the Course Number List
2299      strSQL = "SELECT DISTINCTROW TARGET_MOS.TCourseNumber_PK FROM
2300  TARGET_MOS LEFT JOIN SCH_TGT_MOS ON TARGET_MOS.TargetMOS_PK =
2301  SCH_TGT_MOS.TargetMOS_FK AND TARGET_MOS.TCourseNumber_PK =
2302  SCH_TGT_MOS.TCourseNumber_FK WHERE (((SCH_TGT_MOS.TargetMOS_FK) Is
2303  Null)AND((SCH_TGT_MOS.TCourseNumber_FK) Is Null))ORDER BY
2304  TCourseNumber_PK;"
2305      Me.SCourseNumber_PK.RowSource = strSQL
2306
2307  End Sub
2308
2309  Private Sub btnResetAllPenalties_Click()
2310
2311
2312      ' Disables the action query confirmation message
2313      Application.SetOption "Confirm Action Queries", False
2314      DoCmd.SetWarnings (False)
2315
2316      DoCmd.RunSQL "UPDATE SCHOOL SET PenaltyFactor = 24;"
2317
2318      ' Enables the action query confirmation message
2319      Application.SetOption "Confirm Action Queries", True
2320      DoCmd.SetWarnings (True)
2321
2322      cmbPenaltyView = "1x"
2323
2324  End Sub
2325
2326  Private Sub cmbCourseNumberFind_AfterUpdate()
2327
2328      Dim R As Recordset
2329      Set R = Me.RecordsetClone
2330      R.FindFirst "[SCourseNumber_PK] = " & Chr(34) &
2331  Me![cmbCourseNumberFind] & Chr(34)
2332      Me.Bookmark = R.Bookmark
2333      Me![cmbCourseNumberFind] = Null
2334      Me.SCourseNumber_PK.SetFocus
2335
2336  End Sub
2337
2338  Private Sub cmbPenaltyView_AfterUpdate()
2339
```

```
    Select Case cmbPenaltyView
        Case "4x"
            txtPenaltyFactor = 4 * 24
        Case "3x"
            txtPenaltyFactor = 3 * 24
        Case "2x"
            txtPenaltyFactor = 2 * 24
        Case "1x"
            txtPenaltyFactor = 1 * 24
        Case "1/2x"
            txtPenaltyFactor = 24 / 2
        Case "1/3x"
            txtPenaltyFactor = 24 / 3
        Case "1/4x"
            txtPenaltyFactor = 24 / 4
    End Select

    ' Save the update
    DoCmd.DoMenuItem acFormBar, acRecordsMenu, acSaveRecord, _

End Sub

Private Sub Command14_Click()

    Dim strSQL As String

    ' Disables the action query confirmation message
    Application.SetOption "Confirm Action Queries", False
    DoCmd.SetWarnings (False)

    DoCmd.RunSQL "INSERT INTO TARGET_MOS ( TCourseNumber_PK,
TargetMOS_PK, MCC ) SELECT DISTINCT BNA_EXTRACT.CourseNumber_PK,
BNA_EXTRACT.TargetMOS_PK, BNA_EXTRACT.MCC FROM BNA_EXTRACT;"

    ' Enables the action query confirmation message
    Application.SetOption "Confirm Action Queries", True
    DoCmd.SetWarnings (True)

    ' Update the Course Number List
    strSQL = "SELECT DISTINCTROW TARGET_MOS.TCourseNumber_PK FROM
TARGET_MOS LEFT JOIN SCH_TGT_MOS ON TARGET_MOS.TargetMOS_PK =
SCH_TGT_MOS.TargetMOS_PK AND TARGET_MOS.TCourseNumber_PK =
SCH_TGT_MOS.TCourseNumber_PK WHERE (((SCH_TGT_MOS.TargetMOS_PK) Is
Null)AND((SCH_TGT_MOS.TCourseNumber_PK) Is Null))ORDER BY
TCourseNumber_PK;"
    Me.SCourseNumber_PK.RowSource = strSQL

End Sub

Private Sub Command39_Click()

    Dim frm As Form, ctl As Control
    Dim varItm As Variant, intI As Integer
    Dim strSQL As String

    ' Ensures the current record is save to the SCHOOL table
    DoCmd.DoMenuItem acFormBar, acRecordsMenu, acSaveRecord, ,

    ' This code enters the selected Target MOS's into the SCH_TGT_MOS
    Set frm = Forms!frmSchools
    Set ctl = frm!lstTargetMOS_FK
    For Each varItm In ctl.ItemsSelected
        For intI = 0 To ctl.ColumnCount - 1

            ' This puts the value found in the list box into a text box,
making it readable by the query
            Forms!frmSchools!TargetValue.Value = ctl.Column(intI, varItm)

            ' Disables the action query confirmation message
            Application.SetOption "Confirm Action Queries", False

            ' Enters the value into the SCH_TGT_MOS table
            DoCmd.OpenQuery "qryUpdateSCH_TGT_MOS"

            ' Enables the action query confirmation message
            Application.SetOption "Confirm Action Queries", True

        Next intI
    Next varItm

    ' Update the Target MOS list
    strSQL = "SELECT [TargetMOS_FK] FROM [SCH_TGT_MOS] WHERE
[SCourseNumber_FK] = '" & Forms!frmSchools!SCourseNumber_PK.Value & "'" &
" AND AMOS_FK = '" & Forms!frmSchools!AMOS_PK.Value & "'"
    Forms!frmSchools!ListTargetMOS_FK_History.RowSource = strSQL

    ' Update the Potential Target MOS list
    strSQL = "SELECT TargetMOS_PK FROM
qryListUnusedTargetMOSFromTARGET_MOS WHERE TCourseNumber_PK = '" &
Me.lstTargetMOS_FK.RowSource = strSQL

    ' Update the Course Number List
    strSQL = "SELECT DISTINCTROW TARGET_MOS.TCourseNumber_PK FROM
TARGET_MOS LEFT JOIN SCH_TGT_MOS ON TARGET_MOS.TargetMOS_PK =
SCH_TGT_MOS.TargetMOS_FK WHERE (((SCH_TGT_MOS.TargetMOS_FK) Is
Null));"
    Me.SCourseNumber_PK.RowSource = strSQL

    ' Update time stamp
    [Sch_TimeStamp] = Now

End Sub

Private Sub Command40_Click()

    Dim frm As Form, ctl As Control
    Dim varItm As Variant, intI As Integer
    Dim strSQL As String

    ' This code Deletes the selected Target MOS's and its associated
entries from the SCH_TGT_MOS table
    Set frm = Forms!frmSchools
    Set ctl = frm!lstTargetMOS_FK_History
    For Each varItm In ctl.ItemsSelected
        For intI = 0 To ctl.ColumnCount - 1

            ' This puts the value found in the list box into a text box,
making it readable by the query
            Forms!frmSchools!TargetValue.Value = ctl.Column(intI, varItm)

            ' Disables the action query confirmation message
            Application.SetOption "Confirm Action Queries", False

            ' Deletes the record associated with the specified value from
the SCH_TGT_MOS table
            DoCmd.OpenQuery "qryDeleteSCH_TGT_MOS"

            ' Enables the action query confirmation message
            Application.SetOption "Confirm Action Queries", True

        Next intI
    Next varItm

    ' Update the Target MOS list
    strSQL = "SELECT [TargetMOS_FK] FROM [SCH_TGT_MOS] WHERE
[SCourseNumber_FK] = '" & Forms!frmSchools!SCourseNumber_PK.Value & "'" &
" AND AMOS_FK = '" & Forms!frmSchools!AMOS_PK.Value & "'"
    Forms!frmSchools!ListTargetMOS_FK_History.RowSource = strSQL

    ' Update the Potential Target MOS list
    strSQL = "SELECT TargetMOS_PK FROM
qryListUnusedTargetMOSFromTARGET_MOS WHERE TCourseNumber_PK = '" &
Me.lstTargetMOS_FK.RowSource = strSQL

    ' Update the Course Number List
    strSQL = "SELECT DISTINCTROW TARGET_MOS.TCourseNumber_PK FROM
TARGET_MOS LEFT JOIN SCH_TGT_MOS ON TARGET_MOS.TargetMOS_PK =
SCH_TGT_MOS.TargetMOS_FK WHERE (((SCH_TGT_MOS.TargetMOS_FK) Is
Null));"
    Me.SCourseNumber_PK.RowSource = strSQL

    ' Update time stamp
    [Sch_TimeStamp] = Now

End Sub

Private Sub Form_BeforeUpdate(Cancel As Integer)

    [Sch_TimeStamp] = Now

End Sub

Private Sub Form_Current()

    Dim strSQL As String

    ' Update the Potential Target MOS list
    strSQL = "SELECT TargetMOS_PK FROM
qryListUnusedTargetMOSFromTARGET_MOS WHERE TCourseNumber_PK = '" &
Me.lstTargetMOS_FK.RowSource = strSQL

    ' Update the Target MOS List
    strSQL = "SELECT [TargetMOS_FK] FROM [SCH_TGT_MOS] WHERE
[SCourseNumber_FK] = '" & Me.SCourseNumber_PK.Value & "'" & " AND AMOS_FK
= '" & Me.AMOS_PK.Value & "'"
    Me.lstTargetMOS_FK_History.RowSource = strSQL

    ' Update the Course Number List
    strSQL = "SELECT DISTINCTROW TARGET_MOS.TCourseNumber_PK FROM
TARGET_MOS LEFT JOIN SCH_TGT_MOS ON TARGET_MOS.TargetMOS_PK =
SCH_TGT_MOS.TargetMOS_FK AND TARGET_MOS.TCourseNumber_PK =
SCH_TGT_MOS.TCourseNumber_PK WHERE (((SCH_TGT_MOS.TargetMOS_FK) Is
Null)AND((SCH_TGT_MOS.TCourseNumber_PK) Is Null))ORDER BY
TCourseNumber_PK;"
    Me.SCourseNumber_PK.RowSource = strSQL

    ' Forces user to enter data for course number, before the Assigned
    If IsNull(Me.SCourseNumber_PK.Value) Then
        Me!AMOS_PK.Enabled = False
    Else
    ' Allows the user to enter an assigned MOS
        Me!AMOS_PK.Enabled = True
    End If

    ' Prevents the user from accidentally changing a course number
    If IsNull(SCourseNumber_PK) Then
        Me!SCourseNumber_PK.Locked = False
    Else
        Me!SCourseNumber_PK.Locked = True
    End If

    ' Prevents the user from accidentally changing an AMOS
    If IsNull(AMOS_PK) Then
        Me!AMOS_PK.Locked = False
    Else
        Me!AMOS_PK.Locked = True
    End If

    ' Update the penalty factor view
    Select Case txtPenaltyFactor
        Case 96
            cmbPenaltyView = "4x"
        Case 72
            cmbPenaltyView = "3x"
        Case 48
            cmbPenaltyView = "2x"
        Case 24
            cmbPenaltyView = "1x"
        Case 12
            cmbPenaltyView = "1/2x"
        Case 8
            cmbPenaltyView = "1/3x"
        Case 6
            cmbPenaltyView = "1/4x"
    End Select



End Sub

Private Sub SCourseNumber_PK_AfterUpdate()

    Dim rec As Recordset
    Dim db1 As Database
    Dim strSQL As String

    ' Update the drop down list for AMOS
    strSQL = "SELECT TargetMOS_PK FROM TARGET_MOS WHERE TCourseNumber_PK
= '" & Me.SCourseNumber_PK.Value & "'"
    Me.AMOS_PK.RowSource = strSQL
    'Me.lstTargetMOS_FK.RowSource = strSQL

    ' Allows the user to enter an assigned MOS
    Me!AMOS_PK.Enabled = True

End Sub

On Error GoTo Err_btnDelete_Click

Private Sub btnDelete_Click()

    ' Disables the action query confirmation message
    Application.SetOption "Confirm Action Queries", False

    ' Deletes the record associated with the specified value from the
SCH_TGT_MOS table
    DoCmd.OpenQuery "qryDeleteSCH_TGT_MOSEntry"

    ' Deletes the record associated with the specified value from the
SCHOOL table
    'DoCmd.OpenQuery "qryDeleteSCHOOLEntry"

    ' Enables the action query confirmation message
```

```
2600      336     Application.SetOption "Confirm Action Queries", True
2601      337
2602      338     DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
2603      339     DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70
2604      340
2605      341 Exit_btnDelete_Click:
2606      342     Exit Sub
2607      343
2608      344 Err_btnDelete_Click:
2609      345     MsgBox Err.Description
2610      346     Resume Exit_btnDelete_Click
2611      347
2612      348 End Sub
2613      349 Private Sub btnClose_Click()
2614      350 On Error GoTo Err_btnClose_Click
2615      351
2616      352
2617      353     DoCmd.Close
2618      354     DoCmd.OpenForm "frmMaintenanceSwitchboard"
2619      355
2620      356 Exit_btnClose_Click:
2621      357     Exit Sub
2622      358
2623      359 Err_btnClose_Click:
2624      360     MsgBox Err.Description
2625      361     Resume Exit_btnClose_Click
2626      362
2627      363 End Sub
2628
2629  Form: frmSchoolToPEF_Maint
2630      Code
2631      1     Attribute VB_Name = "Form_frmSchoolToPEF_Maint"
2632      2     Attribute VB_Creatable = True
2633      3     Attribute VB_PredeclaredId = True
2634      4     Attribute VB_Exposed = False
2635      5     Option Compare Database
2636      6     Option Explicit
2637      7
2638      8     Private Sub btnClose_Click()
2639      9     On Error GoTo Err_btnClose_Click
2640      10
2641      11
2642      12    DoCmd.Close
2643      13    DoCmd.OpenForm "frmMaintenanceSwitchboard"
2644      14
2645      15  Exit_btnClose_Click:
2646      16    Exit Sub
2647      17
2648      18  Err_btnClose_Click:
2649      19    MsgBox Err.Description
2650      20    Resume Exit_btnClose_Click
2651      21
2652      22
2653      23  End Sub
2654      24
2655      25  Private Sub btnDelete_Click()
2656      26  On Error GoTo Err_btnDelete_Click
2657      27
2658      28
2659      29    DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
2660      30    DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70
2661      31
2662      32  Exit_btnDelete_Click:
2663      33    Exit Sub
2664      34
2665      35  Err_btnDelete_Click:
2666      35    MsgBox Err.Description
2667      37    Resume Exit_btnDelete_Click
2668      38
2669      39  End Sub
2670      40
2671      41  Private Sub cmbCourseNumberFind_AfterUpdate()
2672      42
2673      43    Dim R As Recordset
2674      44    Set R = Me.RecordsetClone
2675      45    R.FindFirst "[SCourseNumber_PK] = " & Chr(34) &
2676  Me![cmbCourseNumberFind] & Chr(34)
2677      46    Me.Bookmark = R.Bookmark
2678      47    Me![cmbCourseNumberFind] = Null
2679      48    Me.SCourseNumber_PK.SetFocus
2680      49
2681      50  End Sub
2682      51
2683      52  Private Sub Form_Current()
2684      53    Dim strSQL As String
2685      54
2686      55    ' Update the Potential PEF list
2687      56    strSQL = "SELECT DISTINCTROW [PEF].[PEF_PK] FROM PEF LEFT JOIN
2688  qrySch_Pef ON [PEF].[PEF_PK] = [qrySch_Pef].[PEF_FK] WHERE
2689  ([qrySch_Pef].[PEF_FK] Is Null) ORDER BY [PEF].[PEF_PK];"
2690      57    Me.LstUnselectedPEF.RowSource = strSQL
2691      58
2692      59    ' Update the Selected PEF List
2693      60    strSQL = "SELECT [PEF_FK] FROM qrySch_Pef;"
2694      61    Me.LstSelectedPEF.RowSource = strSQL
2695      62
2696      63  End Sub
2697      64
2698      65  Private Sub LeftArrow_Click()
2699      66    Dim frm As Form, ctl As Control
2700      67    Dim varItm As Variant, intI As Integer
2701      68    Dim strSQL As String
2702      69
2703      70    ' Ensures the current record is save to the SCHOOL table
2704      71    DoCmd.DoMenuItem acFormBar, acRecordsMenu, acSaveRecord, ,
2705      72
2706      73    ' This code enters the selected Target MOS's into the SCH_TGT_MOS
2707      74    Set frm = Forms!frmSchoolToPEF_Maint
2708      75    Set ctl = frm!LstUnselectedPEF
2709      76    For Each varItm In ctl.ItemsSelected
2710      77      For intI = 0 To ctl.ColumnCount - 1
2711      78
2712      79        ' This puts the value found in the list box into a text box,
2713  making it readable by the query
2714      80        Forms!frmSchoolToPEF_Maint!PEFValue.Value = ctl.Column(intI,
2715      81
2716      82        ' Disables the action query confirmation message
2717      83        Application.SetOption "Confirm Action Queries", False
2718      84
2719      85        ' Enters the value into the SCH_TGT_MOS table
2720      86        DoCmd.OpenQuery "qryUpdateSCH_PEF"
2721      87
2722      88        ' Enables the action query confirmation message
2723      89        Application.SetOption "Confirm Action Queries", True
2724      90
2725      91      Next intI
2726      92    Next varItm
2727      93
2728      94    ' Update the Potential PEF list
2729      95    strSQL = "SELECT DISTINCTROW [PEF].[PEF_PK] FROM PEF LEFT JOIN
2730  qrySch_Pef ON [PEF].[PEF_PK] = [qrySch_Pef].[PEF_FK] WHERE
2731  ([qrySch_Pef].[PEF_FK] Is Null) ORDER BY [PEF].[PEF_PK];"
2732      96    Me.LstUnselectedPEF.RowSource = strSQL
2733      97
2734      98    ' Update the Selected PEF List
2735      99    strSQL = "SELECT [PEF_FK] FROM qrySch_Pef;"
2736      100   Me.LstSelectedPEF.RowSource = strSQL
2737      101
2738      102 End Sub
2739      103
2740      104 Private Sub RightArrow_Click()
2741      105   Dim frm As Form, ctl As Control
2742      106   Dim varItm As Variant, intI As Integer
2743      107   Dim strSQL As String
2744      108
2745      109   ' This code Deletes the selected Target MOS's and its associated
2746  entries from the SCH_TGT_MOS table
2747      110   Set frm = Forms!frmSchoolToPEF_Maint
2748      111   Set ctl = frm!LstSelectedPEF
2748      112   For Each varItm In ctl.ItemsSelected
2750      113     For intI = 0 To ctl.ColumnCount - 1
2751      114
2752      115       ' This puts the value found in the list box into a text box,
2753  making it readable by the query
2754      116       Forms!frmSchoolToPEF_Maint!PEFValue.Value = ctl.Column(intI,
2755      117
2756      118       ' Disables the action query confirmation message
2757      119       Application.SetOption "Confirm Action Queries", False
2758      120
2759      121       ' Deletes the record associated with the specified value from
2760  the SCH_TGT_MOS table
2761      122       DoCmd.OpenQuery "qryDeleteSCH_PEF"
2762      123
2763      124       ' Enables the action query confirmation message
2764      125       Application.SetOption "Confirm Action Queries", True
2765      126
2766      127     Next intI
2767      128   Next varItm
2768      129
2769      130   ' Update the Potential PEF list
2770      131   strSQL = "SELECT DISTINCTROW [PEF].[PEF_PK] FROM PEF LEFT JOIN
2771  qrySch_Pef ON [PEF].[PEF_PK] = [qrySch_Pef].[PEF_FK] WHERE
2772  ([qrySch_Pef].[PEF_FK] Is Null) ORDER BY [PEF].[PEF_PK];"
2773      132   Me.LstUnselectedPEF.RowSource = strSQL
2774      133
2775      134   ' Update the Selected PEF List
2776      135   strSQL = "SELECT [PEF_FK] FROM qrySch_Pef;"
2777      136   Me.LstSelectedPEF.RowSource = strSQL
2778      137
2779      138 End Sub
2780
2781  Form: frmSchoolToPropertyMaint
2782      Code
2783      1     Attribute VB_Name = "Form_frmSchoolToPropertyMaint"
2784      2     Attribute VB_Creatable = True
2785      3     Attribute VB_PredeclaredId = True
2786      4     Attribute VB_Exposed = False
2787      5     Option Compare Database
2788      6     Option Explicit
2789      7
2790      8     Private Sub btnClose_Click()
2791      9     On Error GoTo Err_btnClose_Click
2792      10
2793      11
2794      12    DoCmd.Close
2795      13    DoCmd.OpenForm "frmMaintenanceSwitchboard"
2796      14
2797      15  Exit_btnClose_Click:
2798      16    Exit Sub
2799      17
2800      18  Err_btnClose_Click:
2801      19    MsgBox Err.Description
2802      20    Resume Exit_btnClose_Click
2803      21
2804      22  End Sub
2805      23
2806      24
2807      25  Private Sub btnDelete_Click()
2808      26  On Error GoTo Err_btnDelete_Click
2809      27
2810      28
2811      29    DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
2812      30    DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70
2813      31
2814      32  Exit_btnDelete_Click:
2815      33    Exit Sub
2816      34
2817      35  Err_btnDelete_Click:
2818      36    MsgBox Err.Description
2819      37    Resume Exit_btnDelete_Click
2820      38
2821      39  End Sub
2822      40
2823      41  Private Sub btnLevel0_Click()
2824      42  On Error GoTo Err_btnLevel0_Click
2825      43
2826      44    Dim lngRecordNum As Long
2827      45    Dim strSQL As String
2828      46
2829      47    lngRecordNum = Me.CurrentRecord
2830      48
2831      48    DoCmd.Close
2832      50
2833      51    DoCmd.OpenForm "frmSchoolToPropLevelMaint"
2834      52    DoCmd.GoToRecord acDataForm, "frmSchoolToPropLevelMaint", acGoTo,
2835  lngRecordNum
2836      53    Forms!frmSchoolToPropLevelMaint!ChosenLevel = 0
2837      54
2838      55    ' Update the selected property list
2839      56    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
2840  SCourseNumber_FK = '" &
2841  Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "'" & " And
2842  AMOS_FK = '" & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "'" & "
2843  And Level = '" & Forms!frmSchoolToPropLevelMaint!ChosenLevel & "'" & "
2844  UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK
2845  = '" & Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "'" & "
2846  And AMOS_FK = '" & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "'" &
2847   And Level = '" & Forms!frmSchoolToPropLevelMaint!ChosenLevel & "'"
2848      57    Forms!frmSchoolToPropLevelMaint!lstLevel0.RowSource = strSQL
2849      58
2850      59
2851      60  Exit_btnLevel0_Click:
2852      61    Exit Sub
2853      62
2854      63  Err_btnLevel0_Click:
2855      64    MsgBox Err.Description
2856      65    Resume Exit_btnLevel0_Click
2857      66
2858      67  End Sub
2859      68
```

```
Private Sub btnLevel1_Click()
On Error GoTo Err_btnLevel1_Click

    Dim lngRecordNum As Long
    Dim strSQL As String

    lngRecordNum = Me.CurrentRecord

    DoCmd.Close

    DoCmd.OpenForm "frmSchoolToPropLevelMaint"
    DoCmd.GoToRecord acDataForm, "frmSchoolToPropLevelMaint", acGoTo,
lngRecordNum
    Forms!frmSchoolToPropLevelMaint!ChosenLevel = 1

    ' Update the selected property list
    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
SCourseNumber_FK = " &
Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & " And
AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" & "
And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & "" & "
UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK
= " & Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & "
And AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" &
 And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & ""
    Forms!frmSchoolToPropLevelMaint!lstLevel0.RowSource = strSQL

End Sub

Exit_btnLevel1_Click:
    Exit Sub

Err_btnLevel1_Click:
    MsgBox Err.Description
    Resume Exit_btnLevel1_Click

End Sub

Private Sub btnLevel2_Click()
On Error GoTo Err_btnLevel2_Click

    Dim lngRecordNum As Long
    Dim strSQL As String

    lngRecordNum = Me.CurrentRecord

    DoCmd.Close

    DoCmd.OpenForm "frmSchoolToPropLevelMaint"
    DoCmd.GoToRecord acDataForm, "frmSchoolToPropLevelMaint", acGoTo,
lngRecordNum
    Forms!frmSchoolToPropLevelMaint!ChosenLevel = 2

    ' Update the selected property list
    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
SCourseNumber_FK = " &
Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & " And
AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" & "
And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & "" & "
UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK
= " & Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & "
And AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" &
 And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & ""
    Forms!frmSchoolToPropLevelMaint!lstLevel0.RowSource = strSQL

End Sub

Exit_btnLevel2_Click:
    Exit Sub

Err_btnLevel2_Click:
    MsgBox Err.Description
    Resume Exit_btnLevel2_Click

End Sub

Private Sub btnLevel3_Click()
On Error GoTo Err_btnLevel3_Click

    Dim lngRecordNum As Long
    Dim strSQL As String

    lngRecordNum = Me.CurrentRecord

    DoCmd.Close

    DoCmd.OpenForm "frmSchoolToPropLevelMaint"
    DoCmd.GoToRecord acDataForm, "frmSchoolToPropLevelMaint", acGoTo,
lngRecordNum
    Forms!frmSchoolToPropLevelMaint!ChosenLevel = 3

    ' Update the selected property list
    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
SCourseNumber_FK = " &
Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & " And
AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" & "
And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & "" & "
UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK
= " & Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & "
And AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" &
 And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & ""
    Forms!frmSchoolToPropLevelMaint!lstLevel0.RowSource = strSQL

End Sub

Exit_btnLevel3_Click:
    Exit Sub

Err_btnLevel3_Click:
    MsgBox Err.Description
    Resume Exit_btnLevel3_Click

End Sub

Private Sub btnLevel4_Click()
On Error GoTo Err_btnLevel4_Click

    Dim lngRecordNum As Long
    Dim strSQL As String

    lngRecordNum = Me.CurrentRecord

    DoCmd.Close

    DoCmd.OpenForm "frmSchoolToPropLevelMaint"
    DoCmd.GoToRecord acDataForm, "frmSchoolToPropLevelMaint", acGoTo,
lngRecordNum
    Forms!frmSchoolToPropLevelMaint!ChosenLevel = 4

    ' Update the selected property list
    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
SCourseNumber_FK = " &
Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & " And
AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" & "
And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & "" & "
UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK
= " & Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & "
And AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" &
 And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & ""
    Forms!frmSchoolToPropLevelMaint!lstLevel0.RowSource = strSQL

End Sub

Exit_btnLevel4_Click:
    Exit Sub

Err_btnLevel4_Click:
    MsgBox Err.Description
    Resume Exit_btnLevel4_Click

End Sub

Private Sub btnLevel5_Click()
On Error GoTo Err_btnLevel5_Click

    Dim lngRecordNum As Long
    Dim strSQL As String

    lngRecordNum = Me.CurrentRecord

    DoCmd.Close

    DoCmd.OpenForm "frmSchoolToPropLevelMaint"
    DoCmd.GoToRecord acDataForm, "frmSchoolToPropLevelMaint", acGoTo,
lngRecordNum
    Forms!frmSchoolToPropLevelMaint!ChosenLevel = 5

    ' Update the selected property list
    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
SCourseNumber_FK = " &
Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & " And
AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" & "
And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & "" & "
UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK
= " & Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & "
And AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" &
 And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & ""
    Forms!frmSchoolToPropLevelMaint!lstLevel0.RowSource = strSQL

End Sub

Exit_btnLevel5_Click:
    Exit Sub

Err_btnLevel5_Click:
    MsgBox Err.Description
    Resume Exit_btnLevel5_Click

End Sub

Private Sub btnLevel6_Click()
On Error GoTo Err_btnLevel6_Click

    Dim lngRecordNum As Long
    Dim strSQL As String

    lngRecordNum = Me.CurrentRecord

    DoCmd.Close

    DoCmd.OpenForm "frmSchoolToPropLevelMaint"
    DoCmd.GoToRecord acDataForm, "frmSchoolToPropLevelMaint", acGoTo,
lngRecordNum
    Forms!frmSchoolToPropLevelMaint!ChosenLevel = 6

    ' Update the selected property list
    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
SCourseNumber_FK = " &
Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & " And
AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" & "
And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & "" & "
UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK
= " & Forms!frmSchoolToPropLevelMaint!SCourseNumber_PK.Value & "" & "
And AMOS_FK = " & Forms!frmSchoolToPropLevelMaint!AMOS_PK.Value & "" &
 And Level = " & Forms!frmSchoolToPropLevelMaint!ChosenLevel & ""
    Forms!frmSchoolToPropLevelMaint!lstLevel0.RowSource = strSQL

End Sub

Exit_btnLevel6_Click:
    Exit Sub

Err_btnLevel6_Click:
    MsgBox Err.Description
    Resume Exit_btnLevel6_Click

End Sub

Private Sub cmbCourseNumberFind_AfterUpdate()

    Dim R As Recordset

    Set R = Me.RecordsetClone
    R.FindFirst "[SCourseNumber_PK] = " & Chr(34) &
Me![cmbCourseNumberFind] & Chr(34)
    Me.Bookmark = R.Bookmark
    Me![cmbCourseNumberFind] = Null
    Me.SCourseNumber_PK.SetFocus

End Sub

Private Sub Form_Current()
    Dim strSQL, strInput1, strInput2 As String
    Dim intLevel As Integer

    ' Update the Level 0 list
    intLevel = 0
    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
SCourseNumber_FK = " & Me.SCourseNumber_PK.Value & "" & " And AMOS_FK =
" & Me.AMOS_PK.Value & "" & " And Level = " & intLevel & "" & " UNION
SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK = " &
Me.SCourseNumber_PK.Value & "" & " And AMOS_FK = " & Me.AMOS_PK.Value
& "" & " And Level = " & intLevel & ""
    Me.lstLevel0.RowSource = strSQL

    ' Update the Level 1 list
    intLevel = 1
    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
SCourseNumber_FK = " & Me.SCourseNumber_PK.Value & "" & " And AMOS_FK =
" & Me.AMOS_PK.Value & "" & " And Level = " & intLevel & "" & " UNION
SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK = " &
Me.SCourseNumber_PK.Value & "" & " And AMOS_FK = " & Me.AMOS_PK.Value
& "" & " And Level = " & intLevel & ""
    Me.lstLevel1.RowSource = strSQL

    ' Update the Level 2 list
    intLevel = 2
    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
SCourseNumber_FK = " & Me.SCourseNumber_PK.Value & "" & " And AMOS_FK =
" & Me.AMOS_PK.Value & "" & " And Level = " & intLevel & "" & " UNION
SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK = " &
Me.SCourseNumber_PK.Value & "" & " And AMOS_FK = " & Me.AMOS_PK.Value
```

```
3120      & "" & " And Level = " & intLevel & ""
3121      260   Me.lstLevel2.RowSource = strSQL
3122      261
3123      262   intLevel = 3
3124      263   strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
3125      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3126       '" & Me.AMOS_PK.Value & "'" & " And Level = " & intLevel & " UNION
3127      SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK = '" &
3128       Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK = '" & Me.AMOS_PK.Value
3129      & "'" & " And Level = " & intLevel & ""
3130      264   Me.lstLevel3.RowSource = strSQL
3131      265
3132      266   intLevel = 4
3133      267   strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
3134      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3135       '" & Me.AMOS_PK.Value & "'" & " And Level = " & intLevel & " UNION
3136      SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK = '" &
3137       Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK = '" & Me.AMOS_PK.Value
3138      & "'" & " And Level = " & intLevel & ""
3139      268   Me.lstLevel4.RowSource = strSQL
3140      269
3141      270   intLevel = 5
3142      271   strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
3143      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3144       '" & Me.AMOS_PK.Value & "'" & " And Level = " & intLevel & " UNION
3145      SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK = '" &
3146       Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK = '" & Me.AMOS_PK.Value
3147      & "'" & " And Level = " & intLevel & ""
3148      272   Me.lstLevel5.RowSource = strSQL
3149      273
3150      274   intLevel = 6
3151      275   strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
3152      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3153       '" & Me.AMOS_PK.Value & "'" & " And Level = " & intLevel & " UNION
3154      SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE SCourseNumber_FK = '" &
3155       Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK = '" & Me.AMOS_PK.Value
3156      & "'" & " And Level = " & intLevel & ""
3157      276   Me.lstLevel6.RowSource = strSQL
3158      277
3159      278
3160      279 End Sub
3161
3162  Form: frmSchoolToPropLevelMaint
3163    Code
3164      1   Attribute VB_Name = "Form_frmSchoolToPropLevelMaint"
3165      2   Attribute VB_Creatable = True
3166      3   Attribute VB_PredeclaredId = True
3167      4   Attribute VB_Exposed = False
3168      5   Option Compare Database
3169      6   Option Explicit
3170      7
3171      8   Private Sub btnClose_Click()
3172      9   On Error GoTo Err_btnClose_Click
3173      10
3174      11    Dim lngRecordNum As Long
3175      12
3176      13    lngRecordNum = Me.CurrentRecord
3177      14
3178      15    DoCmd.Close
3179      16
3180      17    DoCmd.OpenForm "frmSchoolToPropertyMaint"
3181      18    DoCmd.GoToRecord acDataForm, "frmSchoolToPropertyMaint", acGoTo,
3182      lngRecordNum
3183      19
3184      20  Exit_btnClose_Click:
3185      21    Exit Sub
3186      22
3187      23  Err_btnClose_Click:
3188      24    MsgBox Err.Description
3189      25    Resume Exit_btnClose_Click
3190      26
3191      27  End Sub
3192      28
3193      29  Private Sub btnDelete_Click()
3194      30  On Error GoTo Err_btnDelete_Click
3195      31
3196      32
3197      33    DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
3198      34    DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70
3199      35
3200      36  Exit_btnDelete_Click:
3201      37    Exit Sub
3202      38
3203      39  Err_btnDelete_Click:
3204      40    MsgBox Err.Description
3205      41    Resume Exit_btnDelete_Click
3206      42
3207      43  End Sub
3208      44
3209      45  Private Sub ChosenLevel_AfterUpdate()
3210      46
3211      47    Dim strSQL As String
3212      48
3213      49    ' Update the potential property list
3214      50    strSQL = "SELECT DISTINCTROW [qryUnionAllProperty].[FPropertyName_PK]
3215       FROM qryUnionAllProperty LEFT JOIN qryUnionPropertyByLevel ON
3216      [qryUnionAllProperty].[FPropertyName_PK] =
3217      [qryUnionPropertyByLevel].[FPropertyName_FK] WHERE
3218      ([qryUnionPropertyByLevel].[FPropertyName_FK] Is Null);"
3219      51    Me.lstLevelUnused.RowSource = strSQL
3220      52    ' Update the selected property list
3221      53    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
3222      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3223       '" & Me.AMOS_PK.Value & "'" & " And Level = " & Me.ChosenLevel.Value &
3224       & " UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE
3225      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3226       '" & Me.AMOS_PK.Value & "'" & " And Level = " & Me.ChosenLevel.Value &
3227
3228      54    Me.lstLevel0.RowSource = strSQL
3229      55
3230      56  End Sub
3231      57
3232      58  Private Sub cmbCourseNumberFind_AfterUpdate()
3233      59
3234      60    Dim R As Recordset
3235      61    Set R = Me.RecordsetClone
3236      62    R.FindFirst "[SCourseNumber_PK] = " & Chr(34) &
3237      Me![cmbCourseNumberFind] & Chr(34)
3238      63    Me.Bookmark = R.Bookmark
3239      64    Me![cmbCourseNumberFind] = Null
3240      65    Me.SCourseNumber_PK.SetFocus
3241      66
3242      67  End Sub
3243      68
3244      69  Private Sub Form_Current()
3245      70
3246      71    Dim strSQL As String
3247      72
3248      73    ' Update the potential property list
3249      74    strSQL = "SELECT DISTINCTROW [qryUnionAllProperty].[FPropertyName_PK]
3250       FROM qryUnionAllProperty LEFT JOIN qryUnionPropertyByLevel ON
3251      [qryUnionAllProperty].[FPropertyName_PK] =
3252      [qryUnionPropertyByLevel].[FPropertyName_FK] WHERE
3253      ([qryUnionPropertyByLevel].[FPropertyName_FK] Is Null);"
3254      75    Me.lstLevelUnused.RowSource = strSQL
3255      76    ' Update the selected property list
3256      77    strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
3257      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3258       '" & Me.AMOS_PK.Value & "'" & " And Level = " & Me.ChosenLevel.Value &
3259       & " UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE
3260      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3261       '" & Me.AMOS_PK.Value & "'" & " And Level = " & Me.ChosenLevel.Value &
3262
3263      78    Me.lstLevel0.RowSource = strSQL
3264      79
3265      80  End Sub
3266      81
3267      82
3268      83  Private Sub LeftArrow_Click()
3269      84    Dim frm As Form, ctl As Control
3270      85    Dim varItm As Variant, intI As Integer
3271      86    Dim strSQL As String
3272      87
3273      88    ' Ensures the current record is save to the SCHOOL table
3274      89    DoCmd.DoMenuItem acFormBar, acRecordsMenu, acSaveRecord, ,
3275      90
3276      91    ' This code enters the selected Target MOS's into the SCH_TGT_MOS
3277      92    Set frm = Forms!frmSchoolToPropLevelMaint
3278      93    Set ctl = frm!lstLevelUnused
3279      94    For Each varItm In ctl.ItemsSelected
3280      95      For intI = 0 To ctl.ColumnCount - 1
3281      96
3282      97        ' This puts the value found in the list box into a text box,
3283      making it readable by the query
3284      98        Forms!frmSchoolToPropLevelMaint!TargetValue.Value =
3285      ctl.Column(intI, varItm)
3286      99
3287      100       ' Disables the action query confirmation message
3288      101       Application.SetOption "Confirm Action Queries", False
3289      102       DoCmd.SetWarnings (False)
3290      103
3291      104       ' Enters the value into the SCH_TGT_MOS table
3292      105       DoCmd.OpenQuery "qryUpdateFUND_SCH_PROP"
3293      106       DoCmd.OpenQuery "qryUpdateLOG_SCH_PROP"
3294      107
3295      108       ' Enables the action query confirmation message
3296      109       Application.SetOption "Confirm Action Queries", True
3297      110       DoCmd.SetWarnings (True)
3298      111
3299      112     Next intI
3300      113   Next varItm
3301      114
3302      115   ' Update the potential property list
3303      116   strSQL = "SELECT DISTINCTROW [qryUnionAllProperty].[FPropertyName_PK]
3304       FROM qryUnionAllProperty LEFT JOIN qryUnionPropertyByLevel ON
3305      [qryUnionAllProperty].[FPropertyName_PK] =
3306      [qryUnionPropertyByLevel].[FPropertyName_FK] WHERE
3307      ([qryUnionPropertyByLevel].[FPropertyName_FK] Is Null);"
3308      117   Me.lstLevelUnused.RowSource = strSQL
3309      118   ' Update the selected property list
3310      119   strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
3311      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3312       '" & Me.AMOS_PK.Value & "'" & " And Level = " & Me.ChosenLevel.Value &
3313       & " UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE
3314      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3315       '" & Me.AMOS_PK.Value & "'" & " And Level = " & Me.ChosenLevel.Value &
3316
3317      120   Me.lstLevel0.RowSource = strSQL
3318      121
3319      122 End Sub
3320      123
3321      124 Private Sub RightArrow_Click()
3322      125   Dim frm As Form, ctl As Control
3323      126   Dim varItm As Variant, intI As Integer
3324      127   Dim strSQL As String
3325      128
3326      129   ' This code Deletes the selected Target MOS's and its associated
3327      entries from the SCH_TGT_MOS table
3328      130   Set frm = Forms!frmSchoolToPropLevelMaint
3329      131   Set ctl = frm!lstLevel0
3330      132   For Each varItm In ctl.ItemsSelected
3331      133     For intI = 0 To ctl.ColumnCount - 1
3332      134
3333      135       ' This puts the value found in the list box into a text box,
3334      making it readable by the query
3335      136       Forms!frmSchoolToPropLevelMaint!TargetValue.Value =
3336      ctl.Column(intI, varItm)
3337      137
3338      138       ' Disables the action query confirmation message
3339      139       Application.SetOption "Confirm Action Queries", False
3340      140       DoCmd.SetWarnings (False)
3341      141
3342      142       ' Deletes the record associated with the specified value from
3343       the FUND or LOG SCH_PROP table
3344      143       DoCmd.OpenQuery "qryDeleteFUND_SCH_PROP"
3345      144       DoCmd.OpenQuery "qryDeleteLOG_SCH_PROP"
3346      145
3347      146       ' Enables the action query confirmation message
3348      147       Application.SetOption "Confirm Action Queries", True
3349      148       DoCmd.SetWarnings (True)
3350      149
3351      150     Next intI
3352      151   Next varItm
3353      152
3354      153   ' Update the potential property list
3355      154   strSQL = "SELECT DISTINCTROW [qryUnionAllProperty].[FPropertyName_PK]
3356       FROM qryUnionAllProperty LEFT JOIN qryUnionPropertyByLevel ON
3357      [qryUnionAllProperty].[FPropertyName_PK] =
3358      [qryUnionPropertyByLevel].[FPropertyName_FK] WHERE
3358      ([qryUnionPropertyByLevel].[FPropertyName_FK] Is Null);"
3360      155   Me.lstLevelUnused.RowSource = strSQL
3361      156   ' Update the selected property list
3362      157   strSQL = "SELECT [FPropertyName_FK] FROM FUND_SCH_PROP WHERE
3363      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3364       '" & Me.AMOS_PK.Value & "'" & " And Level = " & Me.ChosenLevel.Value &
3365       & " UNION SELECT [LPropertyName_FK] FROM LOG_SCH_PROP WHERE
3366      SCourseNumber_FK = '" & Me.SCourseNumber_PK.Value & "'" & " And AMOS_FK =
3367       '" & Me.AMOS_PK.Value & "'" & " And Level = " & Me.ChosenLevel.Value &
3368
3369      158   Me.lstLevel0.RowSource = strSQL
3370      159
3371      160 End Sub
3372
3373  Form: frmScrubMarine
3374    Code
3375      1   Attribute VB_Name = "Form_frmScrubMarine"
3376      2   Attribute VB_Creatable = True
3377      3   Attribute VB_PredeclaredId = True
3378      4   Attribute VB_Exposed = False
3379      5   Option Compare Database
```

```
Option Explicit

Private Sub Close_Click()
On Error GoTo Err_Close_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close current form
    DoCmd.Close

    ' Open specified form
    stDocName = "frmPreprocessing&ExecutionSwitchboard"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Close_Click:
    Exit Sub

Err_Close_Click:
    MsgBox Err.Description
    Resume Exit_Close_Click

End Sub

Private Sub cmbPefFind_AfterUpdate()

    Dim R As Recordset
    Set R = Me.RecordsetClone
    R.FindFirst "[PEF] = " & Chr(34) & Me![cmbPefFind] & Chr(34)
    Me.Bookmark = R.Bookmark
    Me![cmbPefFind] = Null
    Me.SSN_PK.SetFocus

End Sub

Private Sub cmbSSNFind_AfterUpdate()

    Dim R As Recordset
    Set R = Me.RecordsetClone
    R.FindFirst "[SSN_PK] = " & Chr(34) & Me![cmbSSNFind] & Chr(34)
    Me.Bookmark = R.Bookmark
    Me![cmbSSNFind] = Null
    Me.Close.SetFocus

End Sub

Private Sub Delete_Click()
On Error GoTo Err_Delete_Click

    DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
    DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70

Exit_Delete_Click:
    Exit Sub

Err_Delete_Click:
    MsgBox Err.Description
    Resume Exit_Delete_Click

End Sub

Private Sub Form_Current()
    Dim strSQL As String

    ' Update the PEF List
    strSQL = "SELECT DISTINCTROW [MARINE].[PEF]FROM MARINE LEFT JOIN PEF
ON [MARINE].[PEF] = [PEF].[PEF_PK]WHERE ([PEF].[PEF_PK] Is Null)ORDER BY
    Me.cmbPefFind.RowSource = strSQL

End Sub
```

Form: frmSpecialAssignment

```
    Code
    Attribute VB_Name = "Form_frmSpecialAssignment"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit

    Private Sub cmbClassNumber_AfterUpdate()

    Dim strConvert As String

    Me.txtReportDate = Me.cmbClassNumber.Column(2)
    Me.txtMCC = Me.cmbClassNumber.Column(4)

    ' Convert the fiscal year to a two digit number for RD3 File
    strConvert = CStr(Me.cmbClassNumber.Column(3))
    strConvert = Right(strConvert, 2)
    Me.txtFY = CInt(strConvert)

    Me.txtAssignmentType = "S"

End Sub

Private Sub cmbClassNumber_Enter()

    ' This query finds the class numbers, report dates and class
convening dates associated with the chosen school
    strSQL = "SELECT BNA_EXTRACT.ClassNumber_PK,
BNA_EXTRACT.ClassConvDate, BNA_EXTRACT.ReportDate,
BNA_EXTRACT.FiscalYear_PK, BNA_EXTRACT.MCC FROM BNA_EXTRACT INNER JOIN
SCH_TGT_MOS ON (BNA_EXTRACT.CourseNumber_PK =
SCH_TGT_MOS.TCourseNumber_FK) AND (BNA_EXTRACT.TargetMOS_PK =
SCH_TGT_MOS.TargetMOS_FK) WHERE BNA_EXTRACT.CourseNumber_PK =
Forms!frmSpecialAssignment!cmbCourseNumber AND SCH_TGT_MOS.AMOS_FK =
Forms!frmSpecialAssignment!txtAMOS."
    Me.cmbClassNumber.RowSource = strSQL

End Sub

Private Sub cmbCourseNumber_AfterUpdate()

    Me.txtAMOS = Me!cmbCourseNumber.Column(1)

End Sub

Private Sub cmbSSN_AfterUpdate()

    Me.txtSOI = Me!cmbSSN.Column(1)
    Me.txtGradDate = Me!cmbSSN.Column(2)

End Sub

Private Sub cmbSSN_Enter()

    Dim strSQL As String

    strSQL = "SELECT DISTINCTROW MARINE.SSN_PK, MARINE.SOI,
MARINE.GradDate FROM MARINE LEFT JOIN ASSIGNMENT ON MARINE.SSN_PK =
ASSIGNMENT.SSN_FK WHERE (((ASSIGNMENT.SSN_FK) Is Null));"
    Me.cmbSSN.RowSource = strSQL

End Sub

Private Sub cmbSSNFind_AfterUpdate()

    Dim R As Recordset
    Set R = Me.RecordsetClone
    R.FindFirst "[SSN_FK] = " & Chr(34) & Me![cmbSSNFind] & Chr(34)
    Me.Bookmark = R.Bookmark
    Me![cmbSSNFind] = Null
    Me.Close.SetFocus

End Sub

Private Sub Delete_Click()
On Error GoTo Err_Delete_Click

    DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
    DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70

Exit_Delete_Click:
    Exit Sub

Err_Delete_Click:
    MsgBox Err.Description
    Resume Exit_Delete_Click

End Sub

Private Sub Close_Click()
On Error GoTo Err_Close_Click

    Dim stDocName As String
    Dim stLinkCriteria As String

    ' Close current form
    DoCmd.Close

    ' Open specified form
    stDocName = "frmPreprocessing&ExecutionSwitchboard"
    DoCmd.OpenForm stDocName, , , stLinkCriteria

Exit_Close_Click:
    Exit Sub

Err_Close_Click:
    MsgBox Err.Description
    Resume Exit_Close_Click

End Sub

Private Sub Form_Current()

    ' Prevents user from accidentially making special assignments to
marines assigned normally
    If IsNull(Me.cmbSSN.Value) = False Then
        Me!cmbSSN.Enabled = False
        Me!cmbCourseNumber.Enabled = False
        Me!cmbClassNumber.Enabled = False

    ' Allows the user to enter values for the fundamental equation
    Else
        Me!cmbSSN.Enabled = True
        Me!cmbCourseNumber.Enabled = True
        Me!cmbClassNumber.Enabled = True

    End If

End Sub

Private Sub Form_Open(Cancel As Integer)

    DoCmd.GoToRecord acDataForm, "frmSpecialAssignment", acNewRec

End Sub
```

Form: frmSpecialAssignmentOfUnassignedMarine

```
    Code
    Attribute VB_Name = "Form_frmSpecialAssignmentOfUnassignedMarine"
    Attribute VB_Creatable = True
    Attribute VB_PredeclaredId = True
    Attribute VB_Exposed = False
    Option Compare Database
    Option Explicit

    Private Sub cmbClassNumber_AfterUpdate()

    Dim strConvert As String
    Dim strSSN As String
    Dim R As Recordset

    Me.txtReportDate = Me.cmbClassNumber.Column(2)
    Me.txtMCC = Me.cmbClassNumber.Column(4)

    ' Convert the fiscal year to a two digit number for RD3 File
    strConvert = CStr(Me.cmbClassNumber.Column(3))
    strConvert = Right(strConvert, 2)
    Me.txtFY = CInt(strConvert)

    Me.txtAssignmentType = "S"

    ' Keep track of the current SSN
    strSSN = Me.cmbSSN

    Me.txtAMOS = Me!cmbCourseNumber.Column(1)

    ' Updates the current form and subform
    Me.Requery
    Me.Repaint

    ' Moves the record back to the current SSN
    Set R = Me.RecordsetClone
    R.FindFirst "[SSN_FK] = " & Chr(34) & strSSN & Chr(34)
    Me.Bookmark = R.Bookmark

End Sub

Private Sub cmbClassNumber_Enter()

    Dim strSQL As String
```

```
3640        44      ' This query finds the class numbers, report dates and class
3641        convening dates associated with the chosen school
3642        45      strSQL = "SELECT BNA_EXTRACT.ClassNumber_PK,
3643        BNA_EXTRACT.ClassConvDate, BNA_EXTRACT.ReportDate,
3644        BNA_EXTRACT.FiscalYear_PK, BNA_EXTRACT.MCC FROM BNA_EXTRACT INNER JOIN
3645        SCH_TGT_MOS ON (BNA_EXTRACT.CourseNumber_PK =
3646        SCH_TGT_MOS.TCourseNumber_FK) AND (BNA_EXTRACT.TargetMOS_PK =
3647        SCH_TGT_MOS.TargetMOS_FK) WHERE BNA_EXTRACT.CourseNumber_PK =
3648        Forms!frmSpecialAssignmentOfUnassignedMarine!cmbCourseNumber AND
3649        SCH_TGT_MOS.AMOS_FK =
3650        46      Me.cmbClassNumber.RowSource = strSQL
3651        47
3652        48  End Sub
3653        49
3654        50  Private Sub cmbCourseNumber_AfterUpdate()
3655        51
3656        52      Dim strSSN As String
3657        53      Dim R As Recordset
3658        54
3659        55      strSSN = Me.cmbSSN
3660        56
3661        57      ' Keep track of the current SSN
3662        58      strSSN = Me.cmbSSN
3663        59
3664        60      Me.txtAMOS = Me!cmbCourseNumber.Column(1)
3665        61
3666        62      ' Updates the current form and subform
3667        63      Me.Requery
3668        64      Me.Repaint
3669        65
3670        66      ' Moves the record back to the current SSN
3671        67      Set R = Me.RecordsetClone
3672        68      R.FindFirst "[SSN_FK] = " & Chr(34) & strSSN & Chr(34)
3673        69      Me.Bookmark = R.Bookmark
3674        70
3675        71  End Sub
3676        72
3677        73  Private Sub cmbSSN_AfterUpdate()
3678        74
3679        75      Me.txtSOI = Me!cmbSSN.Column(1)
3680        76      Me.txtGradDate = Me!cmbSSN.Column(2)
3681        77
3682        78  End Sub
3683        79
3684        80  Private Sub cmbSSN_Enter()
3685        81
3686        82      Dim strSQL As String
3687        83
3688        84      strSQL = "SELECT DISTINCTROW MARINE.SSN_PK, MARINE.SOI,
3689        MARINE.GradDate FROM MARINE LEFT JOIN ASSIGNMENT ON MARINE.SSN_PK =
3690        ASSIGNMENT.SSN_FK WHERE (((ASSIGNMENT.SSN_FK) Is Null));"
3691        85      Me.cmbSSN.RowSource = strSQL
3692        86
3693        87  End Sub
3694        88
3695        89  Private Sub cmbSSNFind_AfterUpdate()
3696        90
3697        91      Dim R As Recordset
3698        92      Set R = Me.RecordsetClone
3699        93      R.FindFirst "[SSN_FK] = " & Chr(34) & Me![cmbSSNFind] & Chr(34)
3700        94      Me.Bookmark = R.Bookmark
3701        95      Me![cmbSSNFind] = Null
3702        96      Me.Close.SetFocus
3703        97
3704        98  End Sub
3705        99
3706       100  Private Sub Delete_Click()
3707       101  On Error GoTo Err_Delete_Click
3708       102
3709       103
3710       104      DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
3711       105      DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70
3712       106
3713       107  Exit_Delete_Click:
3714       108      Exit Sub
3715       109
3716       110  Err_Delete_Click:
3717       111      MsgBox Err.Description
3718       112      Resume Exit_Delete_Click
3719       113
3720       114  End Sub
3721       115
3722       116  Private Sub Close_Click()
3723       117  On Error GoTo Err_Close_Click
3724       118
3725       119      ' Close current form
3726       120      DoCmd.Close
3727       121
3728       122  Exit_Close_Click:
3729       123      Exit Sub
3730       124
3731       125  Err_Close_Click:
3732       126      MsgBox Err.Description
3733       127      Resume Exit_Close_Click
3734       128
3735       129  End Sub
3736       130
3737       131  Private Sub Form_Current()
3738       132
3739       133          Me!cmbSSN.Enabled = True
3740       134          Me!cmbCourseNumber.Enabled = True
3741       135          Me!cmbClassNumber.Enabled = True
3742       136
3743       137
3744       138
3745       139  End Sub
3746       140
3747       141  Private Sub Form_Open(Cancel As Integer)
3748       142
3749       143
3750       144      DoCmd.GoToRecord acDataForm,
3751       frmSpecialAssignmentOfUnassignedMarine, acNewRec
3752       145
3753       146
3754       147  End Sub
3755
3756  Form: frmUnassignedMarines
3757      Code
3758        1   Attribute VB_Name = "Form_frmUnassignedMarines"
3759        2   Attribute VB_Creatable = True
3760        3   Attribute VB_PredeclaredId = True
3761        4   Attribute VB_Exposed = False
3762        5   Option Compare Database
3763        6   Option Explicit
3764        7
3765        8   Private Sub Close_Click()
3766        9   On Error GoTo Err_Close_Click
3767       10
3768       11       Dim stDocName As String
3769       12       Dim stLinkCriteria As String
3770       13
3771       14       ' Close the current form
3772       15       DoCmd.Close
3773       16       ' Open specified form
3774       17       stDocName = "frmAnalyzeResult"
3775       18       DoCmd.OpenForm stDocName, , , stLinkCriteria
3776       19
3777       20  Exit_Close_Click:
3778       21       Exit Sub
3779       22
3780       23  Err_Close_Click:
3781       24       MsgBox Err.Description
3782       25       Resume Exit_Close_Click
3783       26
3784       27  End Sub
3785       28
3786       29  Private Sub cmbSSNFind_AfterUpdate()
3787       30
3788       31       Dim R As Recordset
3789       32       Set R = Me.RecordsetClone
3790       33       R.FindFirst "[SSN_PK] = " & Chr(34) & Me![cmbSSNFind] & Chr(34)
3791       34       Me.Bookmark = R.Bookmark
3792       35       Me![cmbSSNFind] = Null
3793       36       Me.Close.SetFocus
3794       37
3795       38  End Sub
3796       39
3797       40  Private Sub Form_Current()
3798       41
3799       42       Dim strSQL As String
3800       43       Dim rec As Recordset
3801       44       Dim db1 As Database
3802       45
3803       46       Set db1 = CurrentDb()
3804       47
3805       48       ' Calculates the number of unassigned marines.
3806       49       strSQL = "SELECT Count(PEF) AS TotalUnassigned FROM
3807       50       Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
3808       51       Me.txtTotalUnassigned = rec!TotalUnassigned
3809       52
3810       53  End Sub
3811       54  Private Sub btnAssign_Click()
3812       55  On Error GoTo Err_btnAssign_Click
3813       56
3814       57       Dim stDocName As String
3815       58
3816       59       stDocName = "frmSpecialAssignmentOfUnassignedMarine"
3817       60
3818       61       DoCmd.OpenForm stDocName
3819       62
3820       63  Exit_btnAssign_Click:
3821       64       Exit Sub
3822       65
3823       66  Err_btnAssign_Click:
3824       67       MsgBox Err.Description
3825       68       Resume Exit_btnAssign_Click
3826       69
3827       70  End Sub
3828
3829  Form: subfrmFundamentalProperty
3830      Code
3831        1   Attribute VB_Name = "Form_subfrmFundamentalProperty"
3832        2   Attribute VB_Creatable = True
3833        3   Attribute VB_PredeclaredId = True
3834        4   Attribute VB_Exposed = False
3835        5   Option Compare Database
3836        6   Option Explicit
3837        7   Private Sub cmbValue_FK_AfterUpdate()
3838        8
3839        9       Forms!frmFundamentalProperty![FPropertyName_PK].SetFocus
3840       10
3841       11  End Sub
3842       12
3843       13  Private Sub cmbValue_FK_BeforeUpdate(Cancel As Integer)
3844       14
3845       15      On Error GoTo Err_cmbValue_FK_BeforeUpdate
3846       16
3847       17          Dim db As Database
3848       18          Dim rec As Recordset
3849       19          Dim strSQL As String
3850       20          Dim Convert As Variant
3851       21
3852       22          ' Places value in a form agreeable to Access (e.g. 'HT' or '10')
3853       23          Convert = "" &
3854       Forms!frmFundamentalProperty!subfrmFundamentalProperty!cmbValue_FK & ""
3855       24
3856       25          ' Opens the table PROPERTY_VALUE
3857       26          strSQL = "PROPERTY_VALUE"
3858       27          Set db = CurrentDb()
3859       28          Set rec = db.OpenRecordset(strSQL, dbOpenSnapshot)
3860       29
3861       30          ' Searches for the value entered by the user in the
3862       31          rec.FindFirst "Value_PK = " & Convert
3863       32
3864       33          ' If the value is not in the PROPERTY_VALUE table, it is added.
3865       34          If rec.NoMatch = True Then
3866       35
3867       36              ' Disables the action query confirmation message
3868       37              Application.SetOption "Confirm Action Queries", False
3869       38
3870       39              ' Enters the value into the PROPERTY_VALUE table
3871       40              DoCmd.OpenQuery "qryUpdateProperty_Value"
3872       41
3873       42              ' Updates the drop down list for the combobox
3874       43              strSQL = "SELECT DISTINCT " &
3875       Forms!frmFundamentalProperty!MarineField & " FROM MARINE;"
3876       44
3877       Forms!frmFundamentalProperty!subfrmFundamentalProperty!cmbValue_FK.RowSou
3878       rce = strSQL
3879       45
3880       46              ' Enables the action query confirmation message
3881       47              Application.SetOption "Confirm Action Queries", True
3882       48          End If
3883       49
3884       50          rec.Close
3885       51
3886       52  Exit_cmbValue_FK_BeforeUpdate
3887       53      Exit Sub
3888       54
3889       55  Err_cmbValue_FK_BeforeUpdate:
3890       56      MsgBox Err.Description
3891       57      Application.SetOption "Confirm Action Queries", True
3892       58      Resume Exit_cmbValue_FK_BeforeUpdate
3893       59
3894       60  End Sub
3895
3896
3897  Form: subfrmFundamentalPropertyList
3898      Code
3899        1   Attribute VB_Name = "Form_subfrmFundamentalPropertyList"
```

```
Attribute VB_Creatable = True
Attribute VB_PredeclaredId = True
Attribute VB_Exposed = False
Option Compare Database
Option Explicit

Private Sub cmbValue_FK_BeforeUpdate(Cancel As Integer)
    On Error GoTo Err_cmbValue_FK_BeforeUpdate

        Dim db As Database
        Dim rec As Recordset
        Dim strSQL As String
        Dim Convert As Variant

        'Opens the subfrmFundamentalProperty so the following code will
        DoCmd.OpenForm "subfrmFundamentalProperty", , , , acHidden

        ' Places value in a form agreeable to Access (e.g. 'HT' or '10')
        Convert = "" & Forms![subfrmFundamentalProperty]!cmbValue_FK &
        ' Opens the table PROPERTY_VALUE
        strSQL = "PROPERTY_VALUE"

        Set db = CurrentDb()
        Set rec = db.OpenRecordset(strSQL, dbOpenSnapshot)

        rec.FindFirst "Value_PK = " & Convert
        If rec.NoMatch = True Then
            ' Disables the action query confirmation message
            Application.SetOption "Confirm Action Queries", False

            DoCmd.OpenQuery "qryUpdateProperty_Value"
            strSQL = "SELECT DISTINCT " &
Forms!frmFundamentalProperty!MainneField & " FROM MARINE;"
            Me.cmbValue_FK.RowSource = strSQL

            ' Enables the action query confirmation message
            Application.SetOption "Confirm Action Queries", True
        End If

        rec.Close

        'Closes the subfrmFundamentalProperty without saving changes to
        DoCmd.Close acForm, "subfrmFundamentalProperty"


Exit_cmbValue_FK_BeforeUpdate:
    Exit Sub

Err_cmbValue_FK_BeforeUpdate:
    MsgBox Err.Description
    Application.SetOption "Confirm Action Queries", True
    Resume Exit_cmbValue_FK_BeforeUpdate

End Sub

Private Sub Value_FK_BeforeUpdate(Cancel As Integer)
    On Error GoTo Err_Value_FK_BeforeUpdate

        Dim db As Database
        Dim rec As Recordset
        Dim strSQL As String
        Dim Convert As Variant

        ' Places value in a form agreeable to Access (e.g. 'HT' or '10')
        Convert = "" &
Forms!frmFundamentalProperty!subfrmFundamentalPropertyList!Value_FK & ""
        ' Opens the table PROPERTY_VALUE
        strSQL = "PROPERTY_VALUE"

        Set db = CurrentDb()
        Set rec = db.OpenRecordset(strSQL, dbOpenSnapshot)

        rec.FindFirst "Value_PK = " & Convert
        ' This If Then statement checks to see if the entered value is in
        ' PROPERTY_VALUE table. If not, it is added to the table.
        If rec.NoMatch = True Then
            ' Disables the action query confirmation message
            Application.SetOption "Confirm Action Queries", False

            DoCmd.OpenQuery "qryUpdateProperty_ValueList"

            ' Enables the action query confirmation message
            Application.SetOption "Confirm Action Queries", True
        End If

        rec.Close

Exit_Value_FK_BeforeUpdate:
    Exit Sub

Err_Value_FK_BeforeUpdate:
    MsgBox Err.Description
    Application.SetOption "Confirm Action Queries", True
    Resume Exit_Value_FK_BeforeUpdate

End Sub


Module modFitnessDetermination
Code
Attribute VB_Name = "modFitnessDetermination"
Option Compare Database
Option Explicit

Dim lngStart, lngEnd As Long


Public Function FundPropTest(FundPropName As String, SSN As String) As

    Dim rec As Recordset, rec2 As Recordset, rec3 As Recordset
    Dim strMarField As String, strFundOperator As String, strSQL As
    Dim strMarValueSQL As String, strFundValueSQL As String, strInput As
    Dim varFundValue, varMarValue
    Dim db1 As Database

    FundPropName = "" & FundPropName & ""    'This expression
properly formatss the argument FundPropName, by placing a ' in front of
and behind the value found in FundPropName

    Set db1 = CurrentDb()

    strSQL = "SELECT MainneField, Operator FROM FUNDAMENTAL_PROPERTY
WHERE FPropertyName_PK = " & FundPropName
    Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
    strMarField = rec!MainneField

    strFundOperator = rec!Operator


    strInput = "" & SSN & ""
    strMarValueSQL = "SELECT " & strMarField & " AS [Value] FROM MARINE
WHERE SSN_PK = " & strInput
    Set rec2 = db1.OpenRecordset(strMarValueSQL, dbOpenSnapshot)
    varMarValue = rec2!Value

    strFundValueSQL = "SELECT Value_FK FROM FUND_PROP_VAL WHERE
FPropertyName_FK = " & FundPropName
    Set rec3 = db1.OpenRecordset(strFundValueSQL, dbOpenSnapshot)
    varFundValue = rec3!Value_FK


    ' Convert varFundValue and varMarValue to a numeric, if possible
    If IsNumeric(varFundValue) And IsNumeric(varMarValue) Then
        varFundValue = CInt(varFundValue)
        varMarValue = CInt(varMarValue)
    Else
        varFundValue = CStr(varFundValue)
        varMarValue = CStr(varMarValue)
    End If


    Select Case strFundOperator
        Case "="
            If varMarValue = varFundValue Then
                FundPropTest = True
            End If
        Case "not ="
            If varMarValue <> varFundValue Then
                FundPropTest = True
            End If
        Case "<"
            If varMarValue < varFundValue Then
                FundPropTest = True
            End If
        Case ">"
            If varMarValue > varFundValue Then
                FundPropTest = True
            End If
        Case "<="
            If varMarValue <= varFundValue Then
                FundPropTest = True
            End If
        Case ">="
            If varMarValue >= varFundValue Then
                FundPropTest = True
            End If
        Case "in"
            Do Until rec3.EOF
                varFundValue = rec3!Value_FK
                If IsNumeric(varFundValue) And IsNumeric(varMarValue)
                    varFundValue = CInt(varFundValue)
                    varMarValue = CInt(varMarValue)
                Else
                    varFundValue = CStr(varFundValue)
                    varMarValue = CStr(varMarValue)
                End If
                If varMarValue = varFundValue Then
                    FundPropTest = True
                End If
                rec3.MoveNext
            Loop
    End Select
    rec2.Close
    rec3.Close
    db1.Close


End Function
Public Function LogOrTest(Input1 As Boolean, Input2 As Boolean) As


If Input1 Or Input2 Then
    LogOrTest = True


Else: LogOrTest = False
End If

End Function
Public Function LogAndTest(Input1 As Boolean, Input2 As Boolean) As

If Input1 And Input2 Then
    LogAndTest = True
Else: LogAndTest = False
End If

End Function
Public Function LogPropTest(LogPropName As String, SSN As String) As
    Dim intNewUBound As Integer, j As Integer, k As Integer, l As
Integer, m As Integer
    Dim booOrOperator As Boolean, booAndOperator As Boolean,
booNotOperator As Boolean
    Dim strLogicalEquation As String, strSQL As String, strInput As
    Dim strWorkingEqn() As String
    Dim intSpacePos As Integer    ' position of the space
    Dim db1 As Database
    Dim rec As Recordset


    Set db1 = CurrentDb()


    ' Get the logical equation from the LOGICAL_PROPERTY table
    strInput = "" & LogPropName & ""
    strSQL = "SELECT LogicalEquation FROM LOGICAL_PROPERTY WHERE
LPropertyName_PK = " & strInput & ""
    Set rec = db1.OpenRecordset(strSQL, dbOpenSnapshot)
    strLogicalEquation = rec!LogicalEquation


    ' Parse the string into an array
    ' declare the temporary string as an array
    ReDim strWorkingEqn(0) As String


    ' Find the position of the first space
    intSpacePos = InStr(strLogicalEquation, " ")
    ' loop until no more spaces are found
    ' InStr returns 0 if the space is not found
    Do Until intSpacePos = 0
        ' redimension the array, adding another element
        ' UBound tells us how many elements there already are in the
        ReDim Preserve strWorkingEqn(UBound(strWorkingEqn) + 1)


        ' set the new element to the characters from the beginning of the
        ' string up to the first space.  Left$ returns a number of
        ' from the beginning of a string
        strWorkingEqn(UBound(strWorkingEqn)) =
Trim$(Left$(strLogicalEquation, intSpacePos - 1))


        ' now we've copied these characters into the name, they can be


        ' removed from the original string.  Right$ returns a number of
        ' characters from the end of the string.  It is the rightmost N
```

```
4160    145     ' characters, therefore we subtract the position of the space
4161    146     the length of the string.  This gives us the number of
4162    characters remaining
4163    147     strLogicalEquation = LTrim$(Right$(strLogicalEquation,
4164    Len(strLogicalEquation) - intSpacePos))
4165    148
4166    149     ' find the next space
4167    150     intSpacePos = InStr(strLogicalEquation, " ")
4168    151   Loop
4169    152
4170    153   For j = 1 To (UBound(strWorkingEqn))
4171    154     If strWorkingEqn(j) = "(" Then
4172    155
4173    156 Line1
4174    157       For k = (j + 1) To (UBound(strWorkingEqn))
4175    158         Select Case strWorkingEqn(k)
4176    159           Case ")"
4177    160             For l = (j + 1) To (k - 1)
4178    161               Select Case strWorkingEqn(l)
4179    162                 Case "Or"
4180    163                   booOrOperator = True
4181    164                 Case "And"
4182    165                   booAndOperator = True
4183    166                 Case "Not"
4184    167                   booNotOperator = True
4185    168                 Case "True"
4186    169                   If strWorkingEqn(j) = "(" Then
4187    170                     If booNotOperator Then
4188    171                       strWorkingEqn(j) = "False"
4189    172                       booNotOperator = False
4190    173                     Else
4191    174                       strWorkingEqn(j) = "True"
4192    175                     End If
4193    176                   Else    ' Executed after the first
4194    bracketed property is tested and stored in the location of "("
4195    177                     If booNotOperator Then
4196    178                       strWorkingEqn(l) = "False"
4197    179                       booNotOperator = False
4198    180                     End If
4199    181                     If booOrOperator Then
4200    182                       strWorkingEqn(j) =
4201    LogOrTest(CBool(strWorkingEqn(j)), CBool(strWorkingEqn(l)))
4202    183                       booOrOperator = False
4203    184                     ElseIf booAndOperator Then
4204    185                       strWorkingEqn(j) =
4205    LogAndTest(CBool(strWorkingEqn(j)), CBool(strWorkingEqn(l)))
4206    186                       booAndOperator = False
4207    187                     End If
4208    188                   End If
4209    189                 Case "False"
4210    190                   If strWorkingEqn(j) = "(" Then
4211    191                     If booNotOperator Then
4212    192                       strWorkingEqn(j) = "True"
4213    193                       booNotOperator = False
4214    194                     Else
4215    195                       strWorkingEqn(j) = "False"
4216    196                     End If
4217    197                   Else    ' Executed after the first
4218    bracketed property is tested and stored in the location of "("
4219    198                     If booNotOperator Then
4220    199                       strWorkingEqn(l) = "True"
4221    200                       booNotOperator = False
4222    201                     End If
4223    202                     If booOrOperator Then
4224    203                       strWorkingEqn(j) =
4225    LogOrTest(CBool(strWorkingEqn(j)), CBool(strWorkingEqn(l)))
4226    204                       booOrOperator = False
4227    205                     ElseIf booAndOperator Then
4228    206                       strWorkingEqn(j) =
4229    LogAndTest(CBool(strWorkingEqn(j)), CBool(strWorkingEqn(l)))
4230    207                       booAndOperator = False
4231    208                     End If
4232    209                   End If
4233    210               Case "("    'Do nothing
4234    211               Case Else
4235    212                 If strWorkingEqn(j) = "(" Then
4236    213                   If booNotOperator Then
4237    214                     strWorkingEqn(j) = Not
4238    (FundPropTest(strWorkingEqn(l), SSN))
4239    215                     booNotOperator = False
4240    216                   Else
4241    217                     strWorkingEqn(j) =
4242    FundPropTest(strWorkingEqn(l), SSN)
4243    218                   End If
4244    219                 Else    ' Executed after the first
4245    bracketed property is tested and stored in the location of "("
4246    220                   If booNotOperator Then
4247    221                     strWorkingEqn(l) = Not
4248    (FundPropTest(strWorkingEqn(l), SSN))
4249    222                     booNotOperator = False
4250    223                   Else
4251    224                     strWorkingEqn(l) =
4252    FundPropTest(strWorkingEqn(l), SSN)
4253    225                   End If
4254    226                   If booOrOperator Then
4255    227                     strWorkingEqn(j) =
4256    LogOrTest(CBool(strWorkingEqn(j)), CBool(strWorkingEqn(l)))
4257    228                     booOrOperator = False
4258    229                   ElseIf booAndOperator Then
4259    230                     strWorkingEqn(j) =
4260    LogAndTest(CBool(strWorkingEqn(j)), CBool(strWorkingEqn(l)))
4261    231                     booAndOperator = False
4262    232                   End If
4263    233                 End If
4264    234               End Select
4265    235             Next l
4266    236
4267    237           ' Must transform the working equation to account
4268    for the bracketed expression evaluation.
4269    238
4270    239           intNewUBound = UBound(strWorkingEqn) - (k - j)
4271    240           If intNewUBound <> 1 Then
4272    241             ReDim strTransformedEqn(1 To intNewUBound)
4273    242             For m = 1 To j
4274    243               strTransformedEqn(m) = strWorkingEqn(m)
4275    244             Next m
4276    245             For m = (k + 1) To UBound(strWorkingEqn)
4277    246               strTransformedEqn(m - k + j) =
4278    247             Next m
4279    248             ReDim strWorkingEqn(1 To intNewUBound)
4280    249             For m = 1 To intNewUBound
4281    250               strWorkingEqn(m) = strTransformedEqn(m)
4282    251             Next m
4283    252             j = 1   'Set j back to a value of 1
4284    253             GoTo Line1   'Jumps back to For j = 1 to
4285    (UBound(strWorkingEqn))loop
4286    254           Else
4287    255             LogPropTest = strWorkingEqn(j)
4288    256             Erase strWorkingEqn
4289    257             Erase strTransformedEqn
4290    258           End Function
4291    259         End If
4292    260       Case "("
4293    261         j = k
4294    262         GoTo Line1   'Jumps back to For j = 1 to
4295    (UBound(strWorkingEqn))loop
4296    263       Exit For   'Exits the For k = (j + 1) to
4297    (UBound(strWorkingEqn)) loop
4298    264     End Select
4299    265   Next k
4300    266 End If
4301    267 Next j
4302    268
4303    269 End Function
4304    270
4305    271 Public Sub Fitness()
4306    272   Dim strSQL As String, strClassNumber As String, strAMOS As String
4307    273   Dim strInput1 As String, strInput2 As String
4308    274   Dim i As Integer, j As Integer, k As Integer, l As Integer
4309    275   Dim intNormalFactor As Integer, intFit As Integer, intInput As
4310    276   Dim intLevel1 As Integer, intLevel2 As Integer, intLevel3 As Integer
4311    277   Dim intLevel4 As Integer, intLevel5 As Integer, intLevel6 As Integer
4312    278   Dim sngDesiredWeight As Single, sngEpsilon As Single, sngSumOfFit As
4313    279   Dim sngCount As Single, sngAvgFit As Single, sngFitness As Single
4314    280   Dim sngMandFitValue As Single
4315    281   Dim lngGradDate As Long
4316    282   Dim db1 As Database
4317    283   Dim recClass As Recordset, recMarine As Recordset, recMarClsFit As
4318    284   Dim recPEF As Recordset, recFDesired As Recordset, recLDesired As
4319    285   Dim recFMand As Recordset, recLMand As Recordset
4320    286   Dim booMandProp As Boolean, booPEF As Boolean, booMandatory As
4321    287   Dim varRetVal As Variant
4322    288   Dim frmCurrent As Form_frmClassQuotaPenaltyAndFit
4323    289
4324    290   Set frmCurrent = Forms!frmClassQuotaPenaltyAndFit
4325    291   Set db1 = CurrentDb()
4326    292
4327    293   ' Create TEMP_FIT table
4328    294   Application.SetOption "Confirm Action Queries", False
4329    295
4330    296   lngGradDate = frmCurrent!MCTGradDate
4331    297
4332    298
4333    299   ' Create 2 TEMP_FIT tables from MAR_CLS_FIT table
4334    300   db1.Execute "SELECT SSN_FK, MarineIndex, ClassIndex_FK, Fitness INTO
4335    TEMP_FIT FROM MAR_CLS_FIT;"
4336    301   db1.Execute "SELECT SSN_FK, MarineIndex, ClassIndex_FK, Fitness INTO
4337    TEMP_FIT1 FROM MAR_CLS_FIT;"
4338    302
4339    303   ' Insert into the TEMP_FIT tables the applicable SSN's based on MCT
4340    graduation date
4341    304   db1.Execute "INSERT INTO TEMP_FIT ( SSN_FK )SELECT MARINE.SSN_PK FROM
4342    qrySSN WHERE GradDate = " & lngGradDate & ""
4343    305   db1.Execute "INSERT INTO TEMP_FIT1 ( SSN_FK )SELECT MARINE.SSN_PK
4344    FROM qrySSN WHERE GradDate = " & lngGradDate & ""
4345    305
4346    307   Application.SetOption "Confirm Action Queries", True
4347    308
4348    309   ' Create a dynaset of the temp_fit table
4349    310   strSQL = "SELECT * FROM TEMP_FIT"
4350    311   Set recMarClsFit = db1.OpenRecordset(strSQL, dbOpenDynaset)
4351    312   recMarClsFit.MoveLast
4352    313
4353    314   ' Create the MarineIndex for the Temp_fit table
4354    315   If recMarClsFit.RecordCount > 0 Then
4355    316     recMarClsFit.MoveFirst
4356    317     For i = 1 To recMarClsFit.RecordCount
4357    318       recMarClsFit.Edit
4358    319       recMarClsFit!MarineIndex = i
4359    320       recMarClsFit.Update
4360    321       recMarClsFit.MoveNext
4361    322     Next i
4362    323   End If
4363    324
4364    325   ' Create a dynaset of the Class table
4365    326   strSQL = "SELECT SCourseNumber_FK, AMOS_FK FROM CLASS"
4366    327   Set recClass = db1.OpenRecordset(strSQL, dbOpenDynaset)
4367    328     If recClass.EOF = False Then
4368    329       recClass.MoveLast
4369    330       recClass.MoveFirst
4370    331     End If
4371    332
4372    333   ' Create a dynaset of the Marine table based on TEMP_FIT1 table
4373    334   strSQL = "SELECT * FROM MARINE , TEMP_FIT1 WHERE
4374    (((MARINE.SSN_PK)=[TEMP_FIT1].[SSN_FK]));"
4375    335   Set recMarine = db1.OpenRecordset(strSQL, dbOpenDynaset)
4376    336
4377    337   If recMarine.EOF = False Then
4378    338     recMarine.MoveLast
4379    339     recMarine.MoveFirst
4380    340   End If
4381    341
4382    342   ' Initialize variables
4383    343   booMandProp = True
4384    344   intFit = 0
4385    345   booPEF = False
4386    346   booMandatory = False
4387    347   intNormalFactor = 100
4388    348   intLevel1 = 32
4389    349   intLevel2 = 16
4390    350   intLevel3 = 8
4391    351   intLevel4 = 4
4392    352   intLevel5 = 2
4393    353   intLevel6 = 1
4394    354   sngDesiredWeight =
4395    355   sngMandFitValue = (1 - sngDesiredWeight) * intNormalFactor
4396    356   varRetVal = SysCmd(acSysCmdInitMeter, "Status...",
4397    357   sngEpsilon = 0.000001
4398    358
4399    359   ' Verify recClass has values
4400    350   If recClass.RecordCount > 0 Then
4401    361     strClassNumber = "X"
4402    362     strAMOS = "X"
4403    363
4404    364     ' Cycle through all the classes
4405    365     For i = 1 To recClass.RecordCount
4406    366       ' Yield control temporarily to Windows
4407    367       DoEvents
4408    368       ' Update status bar
4409    369       varRetVal = SysCmd(acSysCmdUpdateMeter, i)
4410    370
4411    371       ' Update the classIndex_FK for the MarClsFit record
4412    372       If recMarClsFit.RecordCount > 0 Then
4413    373         recMarClsFit.MoveFirst
4414    374         For j = 1 To recMarClsFit.RecordCount
4415    375           recMarClsFit.Edit
4416    376           recMarClsFit!ClassIndex_FK = r
4417    377           recMarClsFit.Update
4418    378           recMarClsFit.MoveNext
4419    379         Next j
```

```
4420  380             recMarClsFit.MoveFirst
4421  381           End If
4422  382           ' Check to see if next record is the same school as the last
4423  383           ' If it is, append it to the MAR_CLS_FIT table
4424  384           If (recClass!SCourseNumber_FK = strClassNumber) And
(recClass!AMOS_FK = strAMOS) Then
4425  385             Application.SetOption "Confirm Action Queries", False
4426  386             db1.Execute "INSERT INTO MAR_CLS_FIT ( SSN_FK,
MarineIndex, ClassIndex_FK, Fitness ) SELECT TEMP_FIT.SSN_FK,
4427  TEMP_FIT.MarineIndex, TEMP_FIT.ClassIndex_FK, TEMP_FIT.Fitness FROM
4428  TEMP_FIT WHERE TEMP_FIT.Fitness > 0;"
4429  387             Application.SetOption "Confirm Action Queries", True
4430  388             recClass.MoveNext
4431  389           Else
4432  390             sngSumOfFit = 0
4433  391             sngCount = 0
4434  392             booPEF = False
4435  393             'Verify recMarine has values
4436  394             If recMarine.RecordCount > 0 Then
4437  395
4438  396               ' Initialize variables
4439  397               strInput1 = "" & recClass!SCourseNumber_FK & ""
4440  398               strInput2 = "" & recClass!AMOS_FK & ""
4441  399               intInput = 0
4442  400
4443  401               ' Find all PEF's associated with the current school
4444  402               strSQL = "SELECT PEF_FK FROM SCH_PEF WHERE
4445  SCourseNumber_FK = " & strInput1 & " and AMOS_FK = " & strInput2 & ""
4446  403               Set recPEF = db1.OpenRecordset(strSQL,
4447  404               If recPEF.EOF = False Then
4448  405                 recPEF.MoveLast
4449  406                 recPEF.MoveFirst
4450  407               End If
4451  408
4452  409               ' Find mandatory fundamental properties associated
4453  with the current school
4454  410               strSQL = "SELECT FPropertyName_FK FROM FUND_SCH_PROP
4455  WHERE SCourseNumber_FK = " & strInput1 & " AND AMOS_FK = " & strInput2 &
4456   AND Level =  & intInput & ""
4457  411               Set recFMand = db1.OpenRecordset(strSQL,
4458  412               If recFMand.EOF = False Then
4459  413                 recFMand.MoveLast
4460  414                 recFMand.MoveFirst
4461  415               End If
4462  416
4463  417               ' Find mandatory logical properties associated with
4464  the current school
4465  418               strSQL = "SELECT LPropertyName_FK FROM LOG_SCH_PROP
4466  WHERE SCourseNumber_FK = " & strInput1 & " AND AMOS_FK = " & strInput2 &
4467   AND Level =  & intInput & ""
4468  419               Set recLMand = db1.OpenRecordset(strSQL,
4469  420               If recLMand.EOF = False Then
4470  421                 recLMand.MoveLast
4471  422                 recLMand.MoveFirst
4472  423               End If
4473  424
4474  425               ' Find desired fundamental properties associated with
4475  the curren school
4476  426               strSQL = "SELECT FPropertyName_FK, [Level] FROM
4477  FUND_SCH_PROP WHERE SCourseNumber_FK = " & strInput1 & " AND AMOS_FK = "
4478  & strInput2 & " AND Level <> " & intInput & ""
4479  427               Set recFDesired = db1.OpenRecordset(strSQL,
4480  428               If recFDesired.EOF = False Then
4481  429                 recFDesired.MoveLast
4482  430                 recFDesired.MoveFirst
4483  431               End If
4484  432
4485  433               ' Find desired logical properties associated with the
4486   curren school
4487  434               strSQL = "SELECT LPropertyName_FK, [Level] FROM
4488  LOG_SCH_PROP WHERE SCourseNumber_FK = " & strInput1 & " AND AMOS_FK = " &
4489  strInput2 & " AND Level <> " & intInput & ""
4490  435               Set recLDesired = db1.OpenRecordset(strSQL,
4491  436               If recLDesired.EOF = False Then
4492  437                 recLDesired.MoveLast
4493  438                 recLDesired.MoveFirst
4494  439               End If
4495  440
4496  441               ' Cycle through all the marines
4497  442               For j = 1 To recMarine.RecordCount
4498  443                 ' Yield control temporarily to Windows
4499  444                 DoEvents
4500  445                 ' Check to see if marine's PEF is an open
4501  446                 If recMarine!PEF <> "00" Then
4502  447                   booPEF = False
4503  448                   If recPEF.EOF = False Then
4504  449                     ' Check to see if marine's PEF is
4505  associated with the school
4506  450                     For k = 1 To recPEF.RecordCount
4507  451                       If recPEF!PEF_FK = recMarine!PEF Then
4508  452                         booPEF = True
4509  453                       End If
4510  454                       recPEF.MoveNext
4511  455                     Next k
4512  456                     recPEF.MoveFirst
4513  457                   End If
4514  458                 Else
4515  459                   booPEF = True
4516  460                 End If
4517  461                 ' Compare marine attributes with the mandatory
4518  properties
4519  462                 If booPEF = True Then
4520  463                   ' Check for mandatory fundamental properties
4521  464                   If recFMand.EOF = False Then
4522  465                     For k = 1 To recFMand.RecordCount
4523  466                       ' All tests must prove true for the
4524  mandatory properties
4525  467                       If booMandProp = True Then
4526  468                         If
4527  FundPropTest(recFMand!FPropertyName_FK, recMarine!SSN_PK) = False Then
4528  469                           booMandProp = False
4529  470                         End If
4530  471                         recFMand.MoveNext
4531  472                       End If
4532  473                     Next k
4533  474                     recFMand.MoveFirst
4534  475                   End If
4535  476                   ' Check for mandatory logical properties
4536  477                   If booMandProp = True Then
4537  478                     If recLMand.EOF = False Then
4538  479                       For k = 1 To recLMand.RecordCount
4539  480                         ' All tests must prove true for
4540  the mandatory properties
4541  481                         If booMandProp = True Then
4542  482                           If
4543  LogPropTest(recLMand!LPropertyName_FK, recMarine!SSN_PK) = False Then
4544  483                             booMandProp = False
4545  484                           End If
4546  485                           recLMand.MoveNext
4547  486                         End If
4548  487                       Next k
4549  488                       recLMand.MoveFirst
4550  489                     End If
4551  490                     If booMandProp = True Then
4552  491                       intFit = 1
4553  492                     End If
4554  493                   End If
4555  494                   ' Reset booMandProp for next check
4556  495                   booMandProp = True
4557  496                   ' Compare marine attributes with the desired
4558  properties
4559  497                   If intFit > 0 Then
4560  498                     ' Compare with desired fundamental
4561  499                     If recFDesired.EOF = False Then
4562  500                       For l = 1 To recFDesired.RecordCount
4563  501                         If
4564  FundPropTest(recFDesired!FPropertyName_FK, recMarine!SSN_PK) = True Then
4565  502                           Select Case recFDesired!Level
4566  503                             Case 1
4567  504                               intFit = intFit +
4568  505                             Case 2
4569  506                               intFit = intFit +
4570  507                             Case 3
4571  508                               intFit = intFit +
4572  509                             Case 4
4573  510                               intFit = intFit +
4574  511                             Case 5
4575  512                               intFit = intFit +
4576  513                             Case 6
4577  514                               intFit = intFit +
4578  515                           End Select
4579  516                         End If
4580  517                         recFDesired.MoveNext
4581  516                       Next l
4582  519                       recFDesired.MoveFirst
4583  520                     End If
4584  521                     ' Compare with desired logical properties
4585  522                     If recLDesired.EOF = False Then
4586  523                       For l = 1 To recLDesired.RecordCount
4587  524                         If
4588  FundPropTest(recLDesired!FPropertyName_FK, recMarine!SSN_PK) = True Then
4589  525                           Select Case recLDesired!Level
4590  526                             Case 1
4591  527                               intFit = intFit +
4592  526                             Case 2
4593  529                               intFit = intFit +
4594  530                             Case 3
4595  531                               intFit = intFit +
4596  532                             Case 4
4597  533                               intFit = intFit +
4598  534                             Case 5
4599  535                               intFit = intFit +
4600  536                             Case 6
4601  537                               intFit = intFit +
4602  536                           End Select
4603  539                         End If
4604  540                         recLDesired.MoveNext
4605  541                       Next l
4606  542                       recLDesired.MoveFirst
4607  543                     End If
4608  544                   End If ' If intFit > 0 Then
4609  545                 End If ' If booPEF = True Then
4610  546                 recMarClsFit.Edit
4611  547                 ' If the marine's PEF is not satisfied by the
4612  school or the marine does not meet
4613  548                 all the mandatory properties for the school, a
4614  score of zero is assigned.
4615  549                 ' Otherwise, a value >= 1 is assigned. A score of
4616   1 indicates the school had no
4617  550                 ' desired properties or the marine did not
4618  satisfy any of the desired properties.
4619  551                 ' Later, 1 is subtracted from these scores and
4620  replaced with a small value called
4621  552                 ' epsilon. The epsilon is used to prevent a
4622  divison by zero problem.
4623  553                 recMarClsFit!Fitness = intFit
4624  554                 recMarClsFit.Update
4625  555                 recMarClsFit.MoveNext
4626  556                 ' Prevents counting the entries with zeros since
4627  they are removed later
4628  557                 ' Sums up all the fits and gets a count of how
4629  many fits there are
4630  558                 If intFit > 0 Then
4631  559                   ' The 1 is subtracted from the intFit score
4632  and replaced with a small epsilon
4633  560                   sngSumOfFit = sngSumOfFit + CSng(intFit - 1)
4634  #NAME?
4635  561                   sngCount = sngCount + 1
4636  562                 End If
4637  563                 intFit = 0
4638  564                 recMarine.MoveNext
4639  565               Next j
4640  566               ' Prevent dividing by zero
4641  567               If sngCount > 0 Then
4642  568                 sngAvgFit = sngSumOfFit / sngCount
4643  569                 recMarClsFit.MoveFirst
4644  570                 ' Update the TEMP_FIT table with the normalized
4645  fitness values
4646  571                 For k = 1 To recMarClsFit.RecordCount
4647  572                   If recMarClsFit!Fitness > 0 Then
4648  573                     recMarClsFit.Edit
4649  574                     ' The 1 is subtracted from the stored
4650  fitness score and replaced with a small epsilon
4651  575                     sngFitness = CSng(recMarClsFit!Fitness -
4652  1) + sngEpsilon
4653  576                     recMarClsFit!Fitness =
4654  CInt(sngMandFit(Value + sngFitness * intNormalFactor * sngDesiredWeight /
4655  577                     recMarClsFit.Update
4656  578                   End If
4657  579                   recMarClsFit.MoveNext
4658  580                 Next k
4659  581                 ' Insert the TEMP_FIT records into the
4660  Application.SetOption "Confirm Action Queries",
4661  563                 db1.Execute "INSERT INTO MAR_CLS_FIT ( SSN_FK,
4662  MarineIndex, ClassIndex_FK, Fitness ) SELECT TEMP_FIT.SSN_FK,
4663  TEMP_FIT.MarineIndex, TEMP_FIT.ClassIndex_FK, TEMP_FIT.Fitness FROM
4664  TEMP_FIT WHERE TEMP_FIT.Fitness > 0;"
4665  584                 Application.SetOption "Confirm Action Queries",
4666  585                 strClassNumber = recClass!SCourseNumber_FK
4667  586                 strAMOS = recClass!AMOS_FK
4668  567               End If
4669  588               recMarine.MoveFirst
4670  589               If recClass.EOF = False Then
4671  590                 recClass.MoveNext
4672  591               End If
4673  592             End If ' If recMarine.RecordCount > 0 Then
4674  593           End If ' If (recClass.SCourseNumber_FK = strClassNumber) And
4675  (recClass.AMOS_FK = strAMOS) Then
4676  594       Next i
4677  595     End If '
```

```
4680      596
4681      597   recMarClsFit.Close
4682      598
4683      599   ' Prepare the AMPL rdm1.dat data file
4684      600   Application.SetOption "Confirm Action Queries", False
4685      601   db1.Execute "DELETE * FROM TEMP_FIT;"
4686      602   ' Specify the number of marines
4687      603   db1.Execute "INSERT INTO TEMP_FIT (SSN_FK, MarineIndex) VALUES
4688      ('param totalMarines :=', " & recMarine.RecordCount & ");"
4689      604   db1.Execute "INSERT INTO TEMP_FIT (SSN_FK) VALUES (';');"
4690      605   ' Specify the number of school classes
4691      606   db1.Execute "INSERT INTO TEMP_FIT (SSN_FK, MarineIndex) VALUES
4692      ('param totalClasses :=', " & recClass.RecordCount & ");"
4693      607   db1.Execute "INSERT INTO TEMP_FIT (SSN_FK) VALUES (';');"
4694      608   ' Specify the class demand
4695      609   db1.Execute "INSERT INTO TEMP_FIT (SSN_FK) VALUES ('param demand
4696      610   db1.Execute "INSERT INTO TEMP_FIT ( ClassIndex_FK, Fitness ) SELECT
4697      CLASS.ClassIndex, CLASS.Quota FROM CLASS;"
4698      611   db1.Execute "INSERT INTO TEMP_FIT (SSN_FK) VALUES (';');"
4699      612   ' Specify the class penalty
4700      613   db1.Execute "INSERT INTO TEMP_FIT (SSN_FK) VALUES ('param penalty
4701      614   db1.Execute "INSERT INTO TEMP_FIT ( ClassIndex_FK, Fitness ) SELECT
4702      PENALTY.ClassIndex_FK, PENALTY.Penalty FROM PENALTY;"
4703      615   db1.Execute "INSERT INTO TEMP_FIT (SSN_FK) VALUES (';');"
4704      616   DoCmd.TransferText acExportFixed, "Rdm1_Data Export Specification",
4705      TEMP_FIT, "C:\RDM\AmplData\rdm1.dat"
4706      617
4707      618   ' Prepare the AMPL rdm2.dat data file
4708      619   db1.Execute "DELETE * FROM TEMP_FIT;"
4709      620   db1.Execute "INSERT INTO TEMP_FIT SELECT * FROM MAR_CLS_FIT;"
4710      621   db1.Execute "ALTER TABLE TEMP_FIT DROP COLUMN SSN_FK;"
4711      622   db1.Execute "ALTER TABLE TEMP_FIT ADD COLUMN SSN_FK text;"
4712      623   db1.Execute "INSERT INTO TEMP_FIT (SSN_FK) VALUES ('param fitness
4713      default 0 =);"
4714      624   db1.Execute "SELECT * INTO AMPL_TEMP FROM TEMP_FIT ORDER BY SSN_FK
4715      625   db1.Execute "INSERT INTO AMPL_TEMP (SSN_FK) VALUES (';');"
4716      626   DoCmd.TransferText acExportFixed, "Rdm2_Data Export Specification",
4717      AMPL_TEMP, "C:\RDM\AmplData\rdm2.dat"
4718      627   Application.SetOption "Confirm Action Queries", True
4719      628
4720      629   recMarine.Close
4721      630   recClass.Close
4722      631   ' Remove the created tables
4723      632   db1.Execute "DROP TABLE TEMP_FIT;"
4724      633   db1.Execute "DROP TABLE AMPL_TEMP;"
4725      634   db1.Execute "Drop Table TEMP_FIT1;"
4726      635   db1.Close
4727      636   ' Remove the meter from the status bar
4728      637   varRetVal = SysCmd(acSysCmdRemoveMeter)
4729      638
4730      639 End Sub
4731      640
4732      641
4733      642 Public Sub Quota_Penalty(varUDateBound As Variant)
4734      643   Dim varDate
4735      644   Dim rec As Recordset, rec1 As Recordset
4736      645   Dim strSQL As String, strConvert As String
4737      646   Dim i As Integer
4738      647   Dim db1 As Database
4739      648
4740      649
4741      650   ' Create new class quota file
4742      651   Application.SetOption "Confirm Action Queries", False
4743      652
4744      653   ' Delete the old penalty and class files
4745      654   DoCmd.RunSQL "DELETE * FROM PENALTY"
4746      655   DoCmd.RunSQL "DELETE * FROM CLASS"
4747      656
4748      657   ' Query generates new class quota
4749      658   DoCmd.SetWarnings (False)
4750      659   DoCmd.OpenQuery "qryNewQuota"
4751      660   DoCmd.SetWarnings (True)
4752      661
4753      662   ' Delete any values < 0
4754      663   DoCmd.RunSQL "DELETE * FROM CLASS WHERE Quota <= 0;"
4755      664
4756      665   Application.SetOption "Confirm Action Queries", True
4757      666
4758      667   ' Create index for the class table and format the FY for RD3 file
4759      668   Set db1 = CurrentDb()
4760      669   strSQL = "SELECT CLASS.*, SCHOOL.PenaltyFactor FROM SCHOOL INNER JOIN
4761      CLASS ON (SCHOOL.AMOS_PK = CLASS.AMOS_FK) AND (SCHOOL.SCourseNumber_PK =
4762      CLASS.SCourseNumber_FK);"
4763      670   Set rec = db1.OpenRecordset(strSQL, dbOpenDynaset)
4764      671   rec.MoveLast
4765      672
4766      673   If rec.RecordCount > 0 Then
4767      674     rec.MoveFirst
4768      675     For i = 1 To rec.RecordCount
4769      676       rec.Edit
4770      677       rec!ClassIndex = i
4771      678       ' Converts the fiscal year to a two digit number for RD3 file
4772      679       strConvert = CStr(rec!FiscalYear_PK)
4773      680       strConvert = Right(strConvert, 2)
4774      681       rec!FiscalYear_PK = CInt(strConvert)
4775      682       rec.Update
4776      683       rec.MoveNext
4777      684     Next i
4778      685   End If
4779      686
4780      687   ' Create penalty file
4781      688   ' First, update the Index from the CLASS table
4782      689   Application.SetOption "Confirm Action Queries", False
4783      690   DoCmd.OpenQuery "qryPenaltyIndex"
4784      691   Application.SetOption "Confirm Action Queries", True
4785      692   ' Create a record set of the PENALTY table
4786      693   strSQL = "SELECT * FROM PENALTY"
4787      694   Set rec1 = db1.OpenRecordset(strSQL, dbOpenDynaset)
4788      695   If IsNull(varUDateBound) = False Then
4789      696     ' Format this date for use in the DateDiff function
4790      697     varUDateBound = Format(varUDateBound, "####/##/##")
Module: modFitnessDetermination    Page 16
4792      698
4793      699     If rec.RecordCount > 0 Then
4794      700       rec.MoveFirst
4795      701       For i = 1 To rec.RecordCount
4796      702         rec1.Edit
4797      703         ' Get report date from class record
4798      704         varDate = rec!ReportDate
4799      705         ' Format the report date for use in the DateDiff function
4800      706         varDate = Format(varDate, "####/##/##")
4801      707         ' Make the penalty the difference between the two values
4802      708         ' This makes the penalty linear, based on date
4803      709         rec1!Penalty = DateDiff("d", varDate, varUDateBound) *
4804      rec!PenaltyFactor \ 24
4805      710         rec1.Update
4806      711         rec.MoveNext
4807      712         rec1.MoveNext
4808      713       Next i
4809      714     End If
4810      715   End If
4811      716
4812      717 End Sub
4813      718
4814      719 Public Sub DeleteTable()
4815      720 On Error GoTo DeleteTable_Err
4816      721
4817      722   Dim db1 As Database
4818      723
4819      724   Set db1 = CurrentDb()
4820      725   ' Delete the table if it already exists
4821      726   db1.TableDefs.Delete "PERCENTAGE"
4822      727 DeleteTable_Exit:
4823      728   Exit Sub
4824      729
4825      730 DeleteTable_Err:
4826      731   Select Case Err.Number
4827      732     ' This number occurs if the PERCENTAGE table does not exist.
4828      733     Case 3265
4829      734       Resume DeleteTable_Exit
4830      735     Case Else
4831      736       MsgBox Err.Description
4832      737       Resume DeleteTable_Exit
4833      738       Resume
4834      739     End Select
4835      740
4836      741 End Sub
4837
4838  Module  modImportExportData
4839      Code
4840      1   Attribute VB_Name = "modImportExportData"
4841      2   Option Compare Database
4842      3   Option Explicit
4843      4
4844      5   Public Sub ImportBNA()
4845      6
4846      7     DoCmd.TransferText acImportFixed, "BNAExtract", "qryBNAExtract",
4847      C:\ToBeRdm\RdmData\BNA.txt
4848      8
4849      9   End Sub
4850      10
4851      11  Public Sub ImportRD1()
4852      12
4853      13    DoCmd.TransferText acImportFixed, "RD1", "qryMarine",
4854      C:\ToBeRdm\RdmData\RD1.txt
4855      14
4856      15  End Sub
4857      16
4858      17  Public Sub ImportToTarget_MOS() '(ActionQuery As String)
4859      18
4860      19    CurrentDb().Execute "INSERT INTO TARGET_MOS ( CourseNumber_PK,
4861      TargetMOS_PK, MCC ) SELECT DISTINCT BNA_EXTRACT.CourseNumber_PK,
4862      BNA_EXTRACT.TargetMOS_PK, BNA_EXTRACT.MCC FROM BNA_EXTRACT"
4863      20
4864      21  End Sub
4865      22
4866      23  Public Sub Ampl_Result()
4867      24
4868      25    DoCmd.TransferText acImportDelim, "Ampl_Result", "AMPL_RESULT",
4869      C:\ToBeRdm\AmplData\rdm.out, True
4870      26
4871      27  End Sub
4872      28
4873      29  Public Sub AmplData()
4874      30    Dim db1 As Database
4875      31
4876      32    Set db1 = CurrentDb()
4877      33
4878      34    ' Prepare the AMPL rdm.dat data file
4879      35    Application.SetOption "Confirm Action Queries", False
4880      36    db1.Execute "CREATE TABLE CONSTANTS (ConstantName TEXT, intValue
4881      37    ' Specify the fit constant
4882      38    db1.Execute "INSERT INTO CONSTANTS (ConstantName, IntValue) VALUES
4883      ('param fitConstant :=', " & Forms!frmPrepareAndExecuteSolver!cmbFit &
4884      39    db1.Execute "INSERT INTO CONSTANTS (ConstantName) VALUES (';');"
4885      40    ' Specify the fill constant
4886      41    db1.Execute "INSERT INTO CONSTANTS (ConstantName, intValue) VALUES
4887      ('param fillConstant :=', " & Forms!frmPrepareAndExecuteSolver!cmbFill &
4888      42    db1.Execute "INSERT INTO CONSTANTS (ConstantName) VALUES (';');"
4889      43    DoCmd.TransferText acExportFixed, "Rdm_Data Export Specification",
4890      CONSTANTS, "C:\ToBeRdm\AmplData\rdm.dat"
4891      44    Application.SetOption "Confirm Action Queries", True
4892      45
4893      46    ' Remove the created table
4894      47    db1.Execute "DROP TABLE CONSTANTS;"
4895      48    db1.Close
4896      49  End Sub
4897      50
4898      51  Public Sub ExportRD3()
4899      52
4900      53    DoCmd.TransferText acExportFixed, "ExportRD3File", "qryRD3File",
4901      C:\ToBeRDM\RdmData\RD3.txt
4902      54    Application.SetOption "Confirm Action Queries", False
4903      55    DoCmd.OpenQuery "qryUpdateAssignmentType"
4904      56    DoCmd.OpenQuery "qryAppendResultToAssignment"
4905      57    Application.SetOption "Confirm Action Queries", True
4906      58
4907      59
4908      60  End Sub
4909      61
4910      62  Public Sub ArchiveData()
4911      63
4912      64    Dim varTodaysDate
4913      65    Dim strSQL As String
4914      66
4915      67    varTodaysDate = Date
4916      68
4917      69    ' Format the date
4918      70    varTodaysDate = Format(varTodaysDate, "yyyymmdd")
4919      71    ' Convert the date into a number
4920      72    varTodaysDate = CLng(varTodaysDate)
4921      73
4922      74    ' Archive the applicable data
4923      75    DoCmd.RunSQL "INSERT INTO MARINE_ASSIGN_ARCHIVE SELECT DISTINCTROW
4924      MARINE.SSN_PK, MARINE.LName, MARINE.Initials, MARINE.Gender,
4925      MARINE.DriverLicense, MARINE.SOI, MARINE.TrainingCompany,
4926      MARINE.MCRD_Code, MARINE.PtNumber, MARINE.Citizenship, MARINE.GradDate,
4927      MARINE.SwimQual, MARINE.Obligation, MARINE.Age, MARINE.Education,
4928      MARINE.HighestMath, MARINE.MentalAbility, MARINE.ClearanceEst,
4929      MARINE.Height, MARINE.Vision, MARINE.ColorPerception, MARINE.EthnicGroup,
4930      MARINE.DLAB, MARINE.EDPT, MARINE.DistrictCode, MARINE.Typing, MARINE.EL,
4931      MARINE.MM, MARINE.CL, MARINE.GT, MARINE.Component, MARINE.PEF,
4932      MARINE.CatConviction, MARINE.RSN, MARINE.AFADSD,
4933      ASSIGNMENT.CourseNumber, ASSIGNMENT.AMOS, ASSIGNMENT.MCC,
4934      ASSIGNMENT.ClassNumber, ASSIGNMENT.ReportDate, ASSIGNMENT.FiscalYear,
4935      ASSIGNMENT.AssignmentType FROM MARINE INNER JOIN ASSIGNMENT ON
4936      MARINE.SSN_PK = ASSIGNMENT.SSN_FK WHERE ASSIGNMENT.ReportDate < " &
4937      76
4938      77    ' Delete the applicable data from the Marine and Assignment tables
4939      78    DoCmd.RunSQL "DELETE DISTINCTROW MARINE.*, ASSIGNMENT.* FROM MARINE
```

```
4939    78      DoCmd.RunSQL "DELETE DISTINCTROW MARINE.*, ASSIGNMENT.* FROM MARINE
4940    INNER JOIN ASSIGNMENT ON MARINE.SSN_PK = ASSIGNMENT.SSN_FK WHERE
4941    ASSIGNMENT.ReportDate < " & varTodaysDate & ""
4942    79
4943    80      Select Case MsgBox("Delete unassigned Marines from the database?",
4944    vbYesNo + vbQuestion, "Delete Unassigned Marines")
4945    81          Case 6 ' If yes is clicked
4946    82              ' Deletes entries in the Marine table without a corresponding
4947     entry in the Assignment table
4948    83              DoCmd.RunSQL "DELETE DISTINCTROW MARINE.*, ASSIGNMENT.SSN_FK
4949    FROM MARINE LEFT JOIN ASSIGNMENT ON MARINE.SSN_PK = ASSIGNMENT.SSN_FK
4950    WHERE (((ASSIGNMENT.SSN_FK) Is Null));"
4951    84          Case 7 ' If no is clicked
4952    85              ' No action taken
4953    86      End Select
4954    87
4955    88  End Sub
```

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